MINIMUM SIZES

TYPE: We recommend using no less than 4 pt. text, especially when reversed out of a solid background. We also recommend using bold fonts for reverse text and avoiding fonts with serifs which may fill in. Where text overlaps more than one color, add a 0.5 pt. stroke to keep text legible.

LINES: Avoid using less than 0.5 pt. rules. A rule finer than 0.5 pt. that has no copy near it may print wavy due to lack of support on the printing plate. Reverse rules less than 0.5 pt. may fill-in especially if there are large solid areas in the same color on the label. Outlines around text or objects should be no less than 0.5 pt. thick.

TOLERANCE TO DIE CUT: For best results, make edge borders 1/16" wide and keep any artwork that does not bleed spaced 1/16" from the die. With any press movement, spacing and borders will still look consistent on all edges of the label.

GRADIENTS & SCREENS

Gradients and screened colors should not use less than a 2% screen of a color. A smooth blend of color to no color at all cannot be achieved unless it is a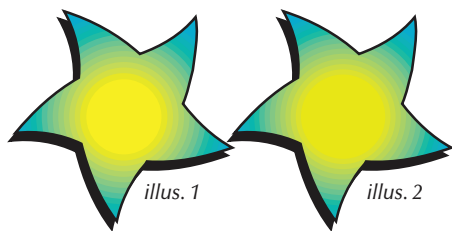 gradient of a very light color, like yellow. Illustration 1 represents how a gradient abruptly stops where there are 1% screens (cyan in this case). The example shown in illus. 2 represents the same art carrying 2% cyan through the center. Please note that, due to dot gain on press, the 2% screened area may gain to a 10% to 12% screen.

illus. 1   illus. 2

Avoid using a screen of a color in large background areas. Color inconsistencies can occur due to movement and vibration on press. Instead, use a lighter solid PMS color for large areas.

PRESS MOVEMENT

Wherever two colors meet they must overlap slightly so that with any movement of the material on press, there is no white gap between the colors. We call this "trapping". In the bottom fish example, the orange color is trapped into the purple. Depending on the design and the colors involved, we may use more or less than .01". You do not need to supply files trapped; we will determine and apply the necessary trap to your files.

The fish here illustrates an issue that occurs as a result of trapping. The purple outline appears almost black since the orange is trapped into it. Art which is too small to trap, like the scales on the fish, will overprint as shown in the bottom example, resulting in a color change. When designing artwork, please be aware of color combinations which may give you similar results.
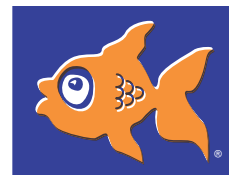
Artwork out of registration with no trap applied.
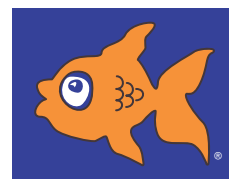
Artwork with trap applied.

REVERSE TEXT

Reversed text over 2 PMS colors or 4-color process

Misregistration results

Outlines added for registration

If reverse text or other objects occur within process or run from one spot color into another, it should be outlined with black or some other color that exists in the layout. If these different colors move even slightly it will distort the text or the object. (If it occurs within process, it may appear blurry.) The outline allows the edges of those colors behind the text to hide behind the outline. Thus, movement will not distort the text or the object. We need at least a 0.5 pt outline to do this. It is also best if any reverse text is a BOLD font.

Multichannel files

Description: Multichannel files are a new feature in Photoshop that allows us to either add additional channels to a process image or reduce a file to only the channels that are used. We would add a channel to a process image in order to add more color to a file. 4 color process is limited in its ability to reproduce all colors. Therefore, we can add a channel of 485 Red, for example, to make a more vivid looking sunset. Some files can be reduced to a channel or two when using specific colors. This can make a process job easier and more accurate to run on press. *(Don't confuse Multichannel files with Duo-, Tri or Quadtones. Remember, their purpose is to enhance a Grayscale or monotone image. They don't divide into separate channels.)*

Other names for this type of file are: DCS file

Resolution requirements: In our work flow, Multichannel files should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. However, there are 8 bits per channel. Therefore, the more channels, the bigger the file.

**Common use:** Photographic images, full-color illustrations.

RGB

Description: RGB (red, green, blue) files are the natural color files for color measured from light. There are three 8-bit channels of red, green and blue (RGB). Scanners scan in RGB and monitors display in RGB. Images in RGB are vibrant and more accurate in color. However, presses can't print RGB. RGB is an "additive" color space. Presses use ink which works in a subtractive color space (CMYK and all spot colors). RGB files must be converted to CMYK and/or spot colors to print. A change/loss of color may (and probably will) occur due to the different gamut ranges. This allows greater and more optimal control over the separation.

Other names for this type of file are: Best not to use other names

Resolution requirements: In our work flow, RGB images should have 300ppi if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. These are 24-bit files (8 bits per channel).

Common use: Photographic images, full-color illustrations viewed on a monitor (and internet).
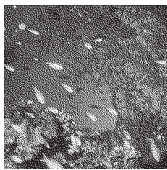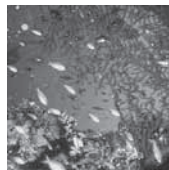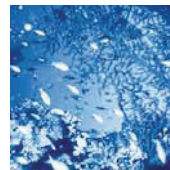
| Bitmap file | Grayscale file | Monotone file | Duotone file | 4 Color Process file | RGB file |

Quality Factors

Resolution: Resolution is a very general term that is often confused with other settings. Resolution, in scanning terms, means how many samples per inch the scanner will read off the original piece. Even though a higher resolution setting will produce more detail, there is a greater price to pay in terms of file size for all that detail. When an electronic file is output to film, printer or monitor, there is a set amount of resolution that those output devices can use. They throw away all of that extra information. Therefore, not understanding or using resolution improperly can result in wasted time, wasted file space and reduction in quality. We would prefer our images at 2 times the line screen that we will use. Therefore, an image at 100% will have a resolution of 300 pixels per inch (2 x 150 lpi = 300) MINIMUM. This amount of resolution supplies enough information to the image setter to output a film at 150 lpi and an output resolution of 2400 dpi. For an optimal setting, we set our files to 300ppi, even if the line screen will be lower.

Rotation: Although it is hard to get an exact angle of rotation when deciding how to place an image into a layout, it is best to know what the angle will be before an original is scanned. Rotating a raster image somewhat degrades the quality of that image. This is because the pixel "grid" cannot rotate along with the image. Edges will become less sharp after rotation. However, it is important to know that this usually occurs in the design stage before it ever gets to us; therefore, the damage is done and we deal with it anyway. If we can find out the angle before we scan an image, we will scan it in at an appropriate angle.
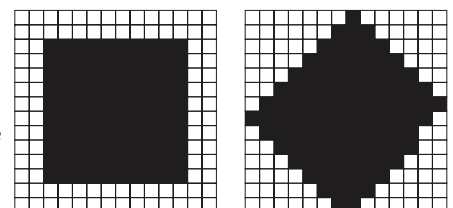
RASTER IMAGES

A raster based application is one in which the art is composed of a "mesh" of squares called pixels. Each pixel is made up of a certain number of colors. These are referred to as channels. The resolution of a raster image is determined by the number of pixels within one inch (communicated as "pixels per inch" - ppi).

There are several ways to describe files that are set up with a certain number of channels or resolutions, and this is what makes communication of digital artwork very confusing. Following is an outline of the different types of raster files that we use.

Bitmapped
Description: 1-bit files are composed of pixels that are either solid black or solid white. These pixels have only one channel - black.
Other names for this type of file are: 1-bit graphic, line art, bitmap
Resolution requirements: 1-bit graphics have to be at a very high resolution in order to appear crisp when output to film. 600 - 1200ppi - more is better, however, over 1200ppi is overkill.
Common use: 1-bit graphics are commonly used for logos or small, simple graphics.

Grayscale
Description: Grayscale files are composed of pixels that are 1 of 256 shades of gray. This is like a 1-bit graphic because the pixels have only one channel - black (256 shades). This is how you see a black and white photographic image.
Other names for this type of file are: Black and White, Monotone, Halftone (not accurate unless it is screened)
Resolution requirements: In our work flow, grayscale images should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. This is an 8-bit graphic.
Common use: Grayscale images are commonly used for black and white images with shades of gray.

Monotone
Description: A Monotone is a Grayscale file; however, instead of black, another color is used. This can be seen on screen as well as output to a digital proofer.
Other names for this type of file are: Should not be called by other names
Resolution requirements: Same as Grayscale
Common use: Same as Grayscale; however, a color other than black is desired.

Duo-, Tri- and Quadtones
Description: These files are just like Monotones; however, there are additional colors added in order to expand the color range of an image. *Important: These are not Multichannel files, the extra colors are added to enhance the look of a grayscale or monotone image.*
Other names for this type of file are: Should not be called by other names
Resolution requirements: Same as Grayscale
Common use: Same as Grayscale; however, other colors are used to enhance the image.

4 Color Process
Description: Process files are composed of pixels that are a mix of colors. These pixels have four channels - cyan, magenta, yellow and black. Each channel works like a monotone of these colors. This 32-bit graphic is considered a full-color image.
Other names for this type of file are: Color, CMYK, full color
Resolution requirements: In our work flow, CMYK images should have 300ppi minimum if the image is used at 100% and output to film at a 150 line screen. We choose a resolution of 2 x line screen as the formula for a minimum setting. For an optimal setting, we set our files to 300ppi even if the line screen will be lower. However, a 32-bit graphic at 300ppi is much larger than an 8-bit graphic at 300ppi (more bits per pixel).
Common use: Photographic images, full-color illustrations.

VECTORIZED ART

When possible, copy should be supplied as vectorized art (curves) and/or editable text so that resolution is not an issue. Vectorized Line Art is art created in a drawing program such as Adobe Illustrator. Line art consists of shapes and lines that can easily be manipulated by grabbing points (nodes or anchor points) and adjusting them (see the selected star shape in illus. A & B). Colors can be applied or an outline can be added easily to vector art. Line thicknesses can be increased easily and the resolution is always good no matter what size the art prints at.

Note the difference in the crispness of text and lines in the two examples shown below.

If text is part of a bitmap image, the pixels determine smoothness.

For better results, use editable text or curves with outlines added for registration.

Trapping and text editing can also be done with ease. In the example below, the background image is the only item supplied as a raster image, the remaining copy is vectorized art or editable text.

Text in curves (not editable- this is vectorized line art)

CMYK bitmap image

Editable text uses font named "Little Mischief"

Star shapes are vectorized lines (note anchor points shown in blue)

illus. A

illus. B
(a view of same artwork in wire frame view)