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Engraving a Photograph on Acrylic

PhotoGrav software helps process images for engraving.

Achieving a quality engraving of a photograph on cast acrylic not only is less complicated than ever and the results vibrant and dramatic, it gives awards retailers more in their product offerings to wow their clients.

Proper software is a key ingredient to making the image first-class.
But even before you create the artwork and send it to your laser engraver, you need to understand that not all acrylic-type materials are manufactured the same: There are two primary types of acrylic on the market for laser engravers, namely “cast” and “extruded.”They are given these names due to the technique used in the manufacturing process of these respective types of material. The acrylic material type that we find most responsive to photographic detail is the cast variety.
Once you have selected a piece of cast acrylic and the image you want to engrave, you are set to begin the process of engraving the photo.
Using PhotoGrav software to help process the image for the engraving, I have outlined the five basic steps to follow:

RESAMPLE

Perform any necessary pre-processing touch-up to the image such as jpeg artifact or halftone correction, contrast, brightness, etc. using a photo-editing software of your choice (e.g., Adobe PhotoShop, Corel PhotoPaint, etc). You also want to resize or resample the image to the desired dimensions and resolution (dpi). I suggest resampling the image to the *same* resolution that you will be engraving. For example if you prefer to engrave at 500 dpi, then resample your image to 500 dpi as well.

BACKGROUND CHECK

Next for any “negative” type of material such as acrylic, make sure the background of the image is all black (not white) if the background is *not* to be engraved.This can be done by selecting or masking out the background of the image by using a simple painting tool such as the familiar “paint bucket” to paint the background black.Sometimes the image to be engraved leans toward the darker colours. If this should happen you will most likely want to lighten up the engraved part of the image a fair amount to provide a nice contrast to the *now*-painted black background. It should be noted here that PhotoGrav does not require the background to be removed; it will usually perform quite well even with the background not removed [See included photos].

BIT BY BIT

Convert the image to an 8-bit grayscale and either Export or Save As a Windows bitmap (.bmp) type of file, again using your favourite image-editing software. Be sure that the type of .bmp file selected in the Export or Save As dialog is a Windows type bitmap as opposed to an OS/2 bitmap type. Also, be sure to save the image with *no* compression of any kind, whether LZW, RLE, etc. In some Save As or Export dialog windows it will ask you to select the number of bits you want to use; of course, make sure that the 8-bit option is selected.

SAVE TO 'ENGRAVED'

Open the saved .bmp in PhotoGrav. Select the material for "Clear Acrylic (cast type)" or "Black Painted Acrylic," and press OK. Then select the "Auto Process" button and let PhotoGrav do its job. You now will be able to cycle between three images, namely the Simulated, Engraved and the Original. You will want to save the Engraved image with an appropriate name and to the appropriate directory for your project. The engraved image will look somewhat strange, but don't worry; it is optimized for laser engravers. So, just ignore the graininess of the image.

ENGRAVE

The last step is to open up or import, the "Engraved" into the software that you use to perform the actual engraving (CorelDRAW is preferred by many laser engravers, but sometimes they use other software or software that comes with their laser engraving system).

Do not resize or make any adjustments to the image after it has been processed by PhotoGrav. Note, however there is only one exception: It is acceptable to mirror or flip the image after it has been processed by PhotoGrav. You can choose to flip the image either in PhotoGrav or in the software you use to engrave. Most people prefer to engrave acrylic on the back side, which gives it more of a 3-D effect, and usually provides an overall better appearance.

Afterward, simply import and position the image as necessary for the acrylic material you selected and engrave the image at the appropriately scaled speed and power settings for your laser engraver: For our 100W laser we prefer to engrave at a resolution of 300 dpi, a speed of 90% and power at 20%.

POINTS TO CONSIDER

Summary of a few more important things you want to remember when engraving on acrylic:

- Ensure that you purchase the "cast" type of acrylic.
- Paint the background of the image black if you don't intend for the background to be engraved
- Flip or mirror the image after PhotoGrav has processed the image (if engraving on the back side of the acrylic piece)
- Engrave on the back side of the acrylic piece