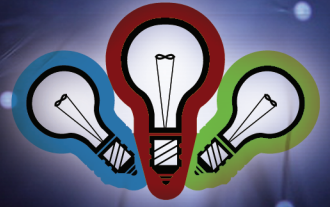


APPLICATION TIPS



Color Fill Glass

Introduction

“Color can speak to the soul in a thousand different ways.” – Oscar Wilde

A dash of color is a great way to increase the beauty and value of many of the products you engrave. Color adds the perfect finishing touch to almost any item and helps distinguish your engraving services from the competition.

Color can be added to engraved items made of wood, glass, Corian[®], acrylic, marble and many other materials. In this tip sheet you will learn how to add color to glass. We hope you will find the process to be rewarding and enjoyable.

Sincerely,

The Universal Laser Systems Training Staff

Color Filling Glass

Section 1: Preparing the Artwork

1.1: Import the design shown in Graphic 1 into CorelDRAW.

Note: If you do not have access to the file, you can create your own design in CorelDRAW or the Windows® based graphic software of your choice.

Section 2: Preparing the Material

2.1: Choose a suitable piece of glass to run the file. For this project, we used a 3-3/4 inch x 6 inch piece of 1/8 inch thick quality glass.

Tip: Good quality glass will provide the best engraving quality. Cheap glass and/or colored glass will typically exhibit chipping and flaking when laser engraved.

2.2: Apply a sheet of high-tack transfer tape to the surface of the glass as shown in Graphic 2 and, working from the center outward, brush with a squeegee tool to remove any wrinkles.

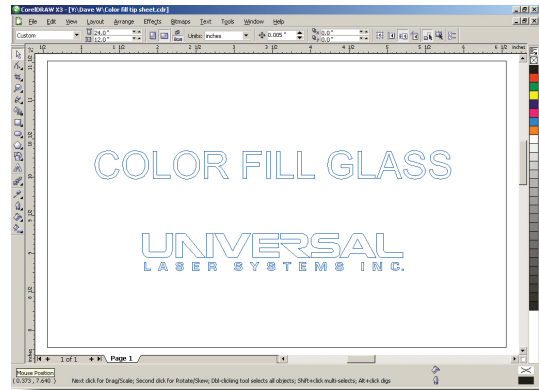
Note: We recommend the use of TransferRite® Ultra transfer tape which is available in a variety of different widths, lengths and adhesion levels from www.denversignsupply.com.

2.3: Engrave black and white artwork – NOT half-tone or grayscale artwork – through the transfer tape onto the glass with the HPDFO™ lens as shown in Graphic 3. Use the power and speed appropriate for your laser system and the material with the following settings:

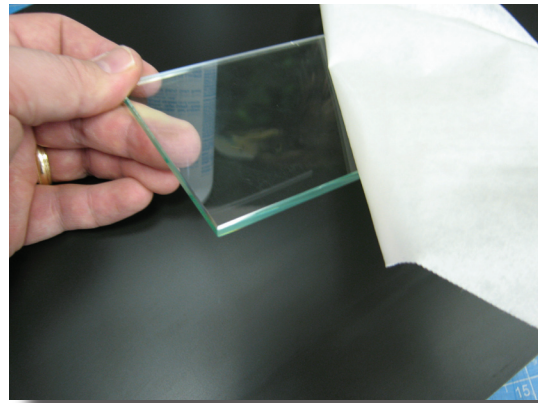
- Use Calculate for Image Enhancement
- Manually set Contrast to 100 percent (gives extra power to the edges for sharp effect)
- Increase Definition by 10 percent over calculated setting
- Set Density to 50 percent (keeps features from blending together)

Note: The above settings do not apply to VersaLaser. If using VersaLaser, use the Glass setting in the materials-based print driver and vary the Intensity control as necessary.

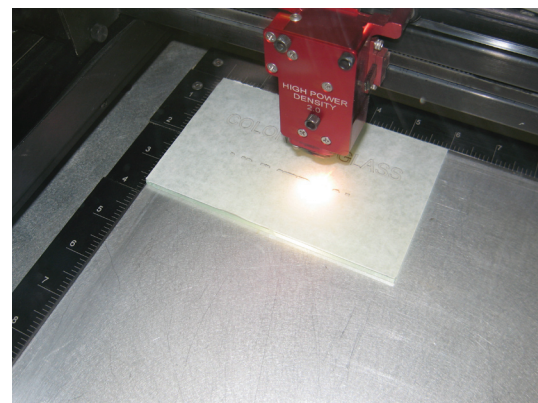
Note: The HPDFO lens is preferred for creating deep, detailed, high-resolution glass engravings. The above settings will also work with a 1.5 inch lens, but the resulting image will not be quite as sharp as when using HPDFO.



(GRAPHIC 1)



(GRAPHIC 2)



(GRAPHIC 3)

Note: Do not attempt to paint fill a grayscale engraving. Grayscale engraving leaves a series of peaks and valleys in the glass that produce unacceptable results when paint filled.

Tip: For best results, adjust system settings using a piece of scrap glass before running the file.

Section 3: Paint Multiple Colors on the Glass

3.1: When the engraving is finished, and with the transfer tape still in place, mask over the bottom line of type as shown in Graphic 4.

3.2: Paint the unmasked top line of type blue as shown in Graphic 5. Multiple light coats are recommended for best results. Be sure to let the paint dry completely between coats.

Tip: Paint the glass in a spray booth if possible, or in a clean, dust-free, well ventilated area. Hold the spray can 10 inches to 12 inches away from the work surface at a 45 degree angle and spray at an even pace.

Note: You can paint the glass using readily available spray cans of multi-purpose enamel.

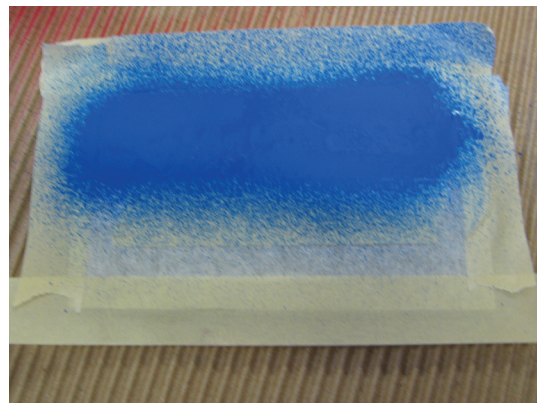
3.3: Mask over the top line of blue paint when dry. Remove the mask from the bottom line of type and paint red.

3.4: Remove the tape from the glass. Done!

3.5: The finished paint filled glass is shown in Graphic 6.



(GRAPHIC 4)



(GRAPHIC 5)

Section 4: Color Filling Glass Using Rub 'n Buff®

4.1: Glass can also be color filled with Rub 'n Buff metallic colors with good results.

Note: Rub 'n Buff is a wax-based finish formulated from carnuba waxes, metallic powders and pigments. Rub 'n Buff provides an attractive metallic finish that no paint can fully duplicate.

4.2: Follow steps 2.1 and 2.2 to prepare the glass surface.

4.3: Change artwork to 60 percent or 70 percent grayscale. The Universal system driver will process the image as a halftone.



(GRAPHIC 6)

4.4: Using the power and speed appropriate for your laser system and the material, engrave onto the glass with a 25-watt laser and 2.0 inch lens with the following settings:

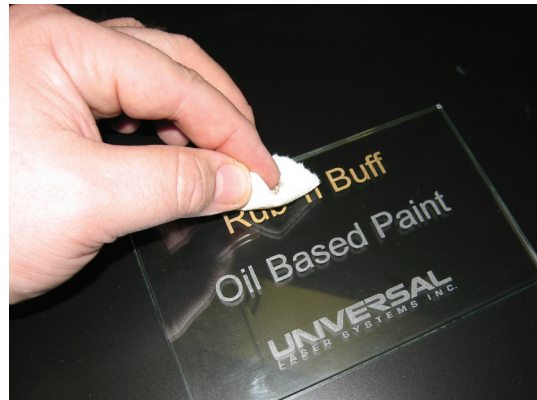
- Power = 100 percent
- Speed = wattage of laser
(i.e., 40-watt laser = 40 speed)
- PPI = 500
- Image Density = 5 (500 DPI)

Note: Using the above recommended lens and power setting should result in a glass engraving that exhibits a smooth texture, low chipping and a brighter, cleaner finish.

4.5: Color fill the engraved areas with Rub 'n Buff as follows: Squeeze a very small amount of Rub 'n Buff onto your fingertip and rub it evenly in a gentle rubbing motion over the engraved glass surface. Buff with a soft dry cloth to achieve a lustrous finish as shown in Graphic 7. Done!

Note: Any excess Rub 'n Buff can be easily wiped off with a soft dry cloth.

Note: Rub 'n Buff is available from most craft stores or online at www.amaco.com/.



(GRAPHIC 7)

Section 5: Color Filling Glass Using Oil Based Paint

5.1: Glass can also be color filled with true oil based paint with good results.

5.2: Apply oil based paint the same as you would apply Rub 'n Buff following steps 4.1 through 4.5 above.

5.3: The finished oil based paint filled glass is shown in Graphic 8. In contrast with the delicate metallic Rub 'n Buff finish, the oil based paint provides richer and more glossy colors.



(GRAPHIC 8)