

# APPLICATION TIPS



## Creating Dimensional Signage with Your Universal Laser System

### Introduction

Three dimensional (3D) signage commands attention.

Three dimensional letters and graphics literally jump out from their backgrounds, creating a unique look no flat type of signage can equal. An expertly-designed and crafted 3D sign creates a distinctive and eye-catching impression that is sure to get noticed.

Your Universal Laser System is ideal for creating attractive and durable interior and exterior 3D signage, lettering and graphics. Three dimensional signs typically command higher market prices than two dimensional signs, making them a profitable business opportunity. Thanks to easy-to-use Windows® based graphic software, even the most complicated 3D sign designs can be produced quickly and easily.

Creating distinctive and profitable 3D signage is easy once you know how. In this tutorial we will take a step-by-step approach to producing 3D signage with your Universal laser system. We hope you will find the process to be rewarding and enjoyable.

Sincerely,

The Universal Laser Systems Training Staff



# Creating Dimensional Signage

## Section 1: Preparing the Artwork

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

*Note: We created The Java House artwork using Adobe® Illustrator, however, you may create your 3D signs using the Windows® compatible graphic software program of your choice.*

1.2: Convert the graphic to hairline red cutting vector and solid black engraving raster format as shown in Graphic 2.



GRAPHIC 1

## Section 2: Preparing the Material

2.1: We will create our 3D sign using 1/4" cast acrylic. We choose cast acrylic for our sign because it's relatively inexpensive, sturdy, and vector cuts and paints well. The 1/4" thickness will add a good sense of depth to the dimensional letters.

*Tip: Choosing an appropriate material for your 3D sign is as important as the sign's message. The material you choose will determine how long your sign will last and help achieve the style you want to communicate.*

*Note: You can purchase acrylic sheet stock from your local acrylic house or online from Curbell Plastics at [www.curbell.com](http://www.curbell.com).*

2.2: Remove the protective paper backing from the acrylic and replace it with a sheet of 3M double-sided adhesive tape. The tape will serve to hold the dimensional pieces to the sign base. Squeegee the adhesive tape to remove any air bubbles.

*Note: 3M double-sided adhesive tape is generally adequate for permanently bonding acrylic indoor signage. If you are creating outdoor signage, or if the signs will be subject to high temperatures or excessive handling, you may want to use a contact-type cement adhesive such as Liquid Nail, which provides exceptional bond strength and durability.*

*Note: Some types of contact-type bonding cements are flammable. All such cements should be kept away from open flame or sources of high heat.*



GRAPHIC 2

### Section 3: Making a Test Cut

3.1: Now it is time to run a test to determine power settings for cutting and engraving.

3.2: Place the acrylic sheet in the Universal laser system with the 3M adhesive side down and focus the laser on a spot well outside the area where you will be cutting and engraving.

3.3: Adjust the system settings as necessary so that you vector cut cleanly through the acrylic and raster engrave it to a depth of approximately 1/64"–1/32".

3.4: We were able to cut and engrave the acrylic satisfactorily using a 50-watt laser system and a 1.5 lens with the following settings:

#### Vector Cutting Settings

- 100 percent power
- 1.5 percent speed
- 1,000 PPI (pulses per inch)
- Image density 5

#### Raster Engraving Settings

- 100 percent power
- 30 percent speed
- 500 PPI (pulses per inch)
- Image density 5

*Tip: We recommend that you use Universal's optional air-assist cone or backsweep when cutting acrylic. Air-assist blows a jet of air across the area being cut that helps to suppress flames and keeps the laser optics cool and clean.*

3.5: When you have the system settings adjusted correctly, cut and engrave the acrylic sheet as shown in Graphic 3.

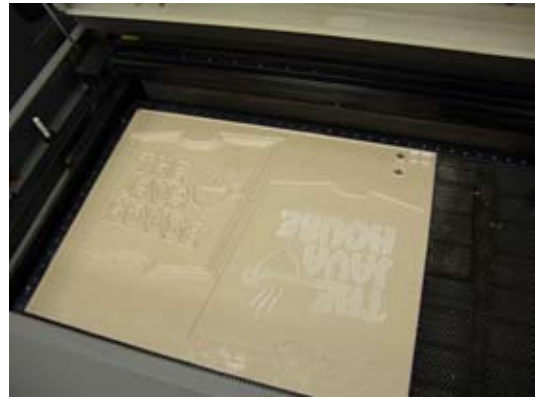
3.6: Graphic 4 shows the vector cut pieces that will be used to create the dimensional look of the sign. Place these pieces aside for now. Be sure to save all of the cut pieces for later use.

3.7: Graphic 5 shows the base of the sign. The deeply engraved areas will "lock in" the vector-cut letters and graphics.

3.8: Graphic 6 shows close-up detail of the three vector-cut pieces that make up the letter "A".

### Section 4: Painting the Sign

4.1: Now it is time to paint the elements of the sign. There are several brands of paint that are specifically formulated for use on acrylic. These paints give spectacular results but require thinning prior to application and are designed to be applied with a professional spray gun.



GRAPHIC 3



GRAPHIC 4



GRAPHIC 5



GRAPHIC 6

*Note: Some commercial thinners are highly flammable and may cause drowsiness, dizziness or nausea if inhaled. If you use commercial thinners, be sure to work in a well ventilated area.*

4.2: For The Java House, we used a readily available spray can of Rust-Oleum® multi-purpose enamel as shown in Graphic 7.

4.3: Paint the pieces as shown in Graphic 8 in a well-vented spray booth. Hold the spray can 10" to 12" away from the work surface at a 45° angle and spray at an even pace. Four or five passes with several seconds between coats should provide sufficient coverage. Let the painted pieces dry overnight before handling.

*Note: You should always clean acrylic before painting. Wipe with Windex® glass cleaner and blow dry using compressed air to remove dust and help the paint adhere to the surface.*

*Tip: Before painting your sign, practice painting on a piece of scrap acrylic sheet.*

*Tip: Be sure to paint in clean, dust-free area.*

*Tip: If you make a mistake painting, take care of the problem immediately. Use the manufacturer's recommended paint remover. Apply the paint remover with a clean rag, and wipe off any excess paint with another clean rag.*

## Section 5: Assembly

5.1: Now it is time to put the painted pieces together.

5.2: Peel the backing from the 3M double-sided adhesive tape and press each letter and graphic element into place as shown in Graphic 9. If you are using a contact-type cement adhesive instead of the 3M adhesive tape, apply a small amount to each letter with a toothpick and press into place.



The completed 3D sign, ready for display.



GRAPHIC 7



GRAPHIC 8



GRAPHIC 9