

Laser Engraving On Glass



By Diane C. Bosworth

ENGRAVERS AND ARTISANS alike have discovered that laser engraving on glass provides a light surface etch that is very attractive and appealing for many applications.

A wide range of products can be engraved via laser. This includes, among other items, picture frame glass, bottles, jars, glasses, mugs, arts and crafts projects, cabinet doors and windows, housewares, point-of-purchase displays, and glass or crystal awards.

When planning jobs that involve laser engraving, the most important thing to keep in mind is that glass will absorb the laser's heat more than other materials. This may result in flaking, cracking, chipping or breaking. Therefore, it is important to dissipate the heat as much as possible when exposing glass to the heat of a laser.

The first step in doing this is to be extremely picky about the glass that you choose for laser engraving. Unlike other materials, where high-end products and materials are recommended because of the expense of laser technology, with glass, the opposite is true. High-end crystal products tend to absorb more of the laser's heat and can result in shattering, cracking or breaking (thermal shock). Inexpensive non-lead products tend to laser engrave the best. If you are going to engrave on crystal, be very careful and reduce the power, while you determine optimal settings. Always experiment first and ask for extra pieces when laser engraving on glass. For diversity, consider colored glass products. Once you discover glass products with which you are happy, stick with them. It is easier to produce the same results if you stick to the same products.

When choosing the artwork, keep in mind that finely detailed lines will look better on glass than large blocks of solid areas. This allows the laser to keep moving and will not allow heat to build up and adversely affect the glass.

Once you are ready to laser engrave, remember that you are trying to reduce the laser's energy that is put into the glass at one time. There are a variety of methods used to help you accomplish this.

Glass is generally engraved at full power and low to moderate speeds. Reducing the pulses per inch (PPI) and the dots per inch (DPI) is one way that may help to dissipate heat.

Many engravers will use a sheet of paper out of a yellow pages phone book, newspaper print, transfer type tape or paper towels and dampen with water. Make sure that you wipe off the excess moisture. Lay the wet page on the surface of the glass. Engrave through the paper. Remove the paper and wipe with a scotchbrite pad or steel brush. This should reduce some of the recasting that occurs giving a coarse look to the glass.

Another method is to use liquid soap (dish soap or hand soap). Wipe this onto the surface of the glass and allow it time to set up. Then laser engrave and clean up with water and a scotchbrite pad or steel brush.

You can also use a ceramic emulsifier or release agent. Dab it onto the surface to be engraved and let it set up. Laser engrave through it. Again, you can use a scotchbrite type pad to smooth out the roughness.

If you are not happy with the engraving results, try a second pass. Sometimes it does take two passes to obtain the desired results.

If you are still unhappy with the results, you may need to look at the glass you are using. It may just not be the best choice for laser engraving.

Using air assist, if your system has it, may also be helpful when engraving on

glass. This will help to keep smoke, heat, and debris away from the engraving surface at the point of laser contact.

Another option that is popular with laser engravers is a rotary fixture. This option attaches to your laser engraving system and will allow you to engrave on curved or rounded surfaces such as glasses or mugs.

You will also want to keep in mind that glass is a material that can produce abrasive materials that may be potentially harmful to optics and other machine components. You will want to keep your machine cleaned and well-maintained if you are laser engraving glass. For specifics, check with your machine's operation manual or the original equipment manufacturer.

Some engravers that we know do prefer the deep etched look of sandblasting, so they use their laser engraving system to cut out the necessary masks. This is a quick and accurate method of making sandblasting resists. If you do not own your own sandblasting equipment, consider looking to hook up with other businesses that do. It is an opportunity for a mutually beneficial alliance.

With the right products and a little practice, you will find that your laser engraving system can also be used to etch on glass products with attractive and profitable results.

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