Value Added Engraving

Human nature is very predictable in most cases and especially when it comes to a perceived value in a product. Somehow, our eyes are always drawn to a shiny gold coin or a sparkling new sports car. The special finish on a product can really create a perceived value that distinguishes it from a lesser product making it worth more.

Laser system owners that visit our trade show display or attend a laser workshop pick up all kinds of ideas on how to create that sizzle on an engraved product. There are many basic techniques for making a good product look exciting and sparkle like that fancy sports car. The real trick is however, to create the dazzle without the hassle. Our goal is to demonstrate how to add that higher perceived value without standing on your head to create some interesting effect. After all, the beauty in having a laser system is to complete jobs quickly and profitably.

Let's start by putting on our marketing hats and do a quick analysis of the products we make in our shop. For most laser system owners, wood items make up a large portion of the product line. Wood products often include plaques, desk accessories, pens and pen boxes, photo frames and much more.

Other popular items include acrylic gifts and plaques, marble desk accessories or even business card holders or pens made from anodized aluminum. Now consider picking the top ten of these items and creating an upscale version to display next to the just plain old laser engraved version in your showroom. Offering increased value in your products is not a new concept and is referred to as ‘up selling’.

Up selling is the same concept that got you that larger french fries and bigger drink with your last hamburger order. The cost to create the up sized product is virtually identical as the normal size. Part of the up selling technique is to be sure to ask the customer if they would like to purchase the shiny product for a little more money. Show the customer a better product for just a little more money and your profits just increased. The customer gets a great perceived value and you just learned how to up sell an order for more profit.

Now let's focus on how to create some effective new samples for your showroom.

Engraving & Cutting Foils

By far, we receive more questions on how to use foils than any other laser process. It is first very important when considering using any type of foil product to make sure it is laser friendly. Remember that your Co2 laser is not capable of cutting real metal foils so the products you will
work with are plastic based but look shiny and metallic like real foils. As with all plastic products that you use when laser processing, they should not contain any PVC (poly vinyl chloride) materials. When PVC materials are cut or engraved with the laser they produce a gas or smoke that contains chloride. Chloride gas is poisonous to breathe and if that is not bad enough it goes to work on the metal parts of your laser like a heat seeking missile, corroding them to the point of eventual failure. Be sure to ask your supplier if their foils are safe for lasers.

One feature I really like about using a foil to add value to a product, is the range of colors and textures available. Gold, silver, bronze, blue, black, green, purple and so many more colors are available in roll form ready to apply and cut. Sometimes just the texture of the foil can create a quality look such as the brushed or polished looking materials.

Fois can be applied like a piece of tape to the item being lasered. Some foils come with a release liner that is a removable white paper which needs to be peeled off before applying. Other foils do not have a release liner and simply look like wide rolls of colored tape. Either style works fine and can produce excellent results.

Apply the foil to the work piece by first wiping any dust or dirt off, then lightly apply a piece of the foil to the area where the artwork will be vector cut.

Vector cutting (or outline cutting) is a very simple method for laser cutting a logo or text from a foil. If your customer gave you camera ready artwork, you can scan the artwork and use vectorizing software such as Euro Vector to create the cutting outlines the laser needs to follow. If the layout includes a corporate logo you might check out a digital ready logo package such as Smart Logos which has thousands of logos already vectorized and ready for engraving and cutting. These types of logos can be imported into Draw using the Adobe Illustrator filter (.ai) which will import both the raster and vector parts of the logo.

Be sure the vector lines for cutting have a line thickness of .003 inches or less applied so your laser system print driver will recognize them as such. When setting your power and speed for cutting the foils, remember low and slow. Low power is what is required for cutting these thin plastic materials and slow speeds always produce smoother cutting lines with less jagged edges.

A quick way to make sure the logo will be cut in the right area on the work piece is to measure the outside dimensions of the work piece and create a box of the same area. Now position the logo in the right spot of the newly created box. Before placing the work piece on the laser engraving table apply a piece of transfer tape to the table. Vector cut the positioning box using low power and you have just created a quick and accurate positioning method.

Place the work piece with foil attached on the engraving table directly over the positioning box we just made. Select the logo in your Draw layout and print it to the laser system being sure to click on the 'print selected objects' button so just the logo is printed over. Double check the focus and you are ready to vector cut the foil.

After the foil is completely cut you can remove the unwanted material or ‘weed’ it out. The insides of letters like A or O can be weeded using a narrow razor knife being careful not to scratch the surface.
underneath. Any left over sticky residue or smoke from laser cutting can be easily removed with a soft cloth and some isopropyl alcohol.

Common faults with cutting foil materials usually revolve around having too much power. The thin plastic material can melt and distort with too much heat from a high laser power setting. Cutting quality can also be improved by increasing the amount of laser pulses to the maximum setting. Usually referred to as PPI (pulses per inch) or as the pulse rate. Detailed information about using these features of your laser system print driver can be found in your owners manual.

Another popular technique for working with foils is to engrave away the background behind the text or logo. Background engraving creates a unique dimensional effect leaving the foil covered area intact. The laser will remove the background area to create contrast in color and depth.

Designing the graphic layout is easy using Corel Draw and works similar to the method used for vector cutting. For background engraving, apply a white fill color to the text or logo. Next create a background area around the graphic with a solid black fill color. Make sure the black background area is layered under the white graphic. If the black background is on top, send it to the back by first selecting it, then using the Shift + Page Down key.

Complete the graphic design and align it in the positioning box as we did for the vector graphics above. Print the graphic to the laser by first selecting all the elements and making sure the ‘print selected objects’ feature is clicked on.

The power and speed settings should be slightly modified from your normal settings for the base material. Since you will be engraving through the foil add 10% more power to your standard settings to compensate.

To prepare the work piece make sure it is free from dirt and dust before applying the foil to the area that will be engraved. The intense laser power required for engraving through the foil and base material combined will create smoke and residue that will deposit on the foil surface if left unprotected. A simple solution is to apply a paper mask over the top of the foil before engraving.

After the engraving is complete remove the paper mask on the foil area. Any remaining smoke residue can be removed using a damp, soft cloth. The result is a uniquely engraved product that is sure to catch the eye.

**Working with Engraveable Laminates**

Engraveable laminates look similar to foils but have the unique feature that they can be engraved and cut with the laser. Laminates such as Spectrum Lights are made from two thin layers of plastic with a self adhesive back. This means you can engrave through the top layer to reveal a base color for a dramatic and professional look. The metallic looking silver or brass colored materials are frequently mistaken for real inlaid metals.

Working with these laminate materials is as easy as using foils with even more possibilities that can
be created using the laser. One feature of laminates is the ability to be used on low power laser system starting at just 12 watts. The durable top surface is easily removed at 100% speed using low power settings to reveal a contrasting base color. Cutting the laminate also requires low power settings to keep it from warping or distorting.

The graphic designs required for working with laminates can be a combination of both raster and vector or just vector alone. Vector graphics work the same as with the foils. Combining both raster and vector means using a black fill for the areas to be engraved and making sure the vector lines have the correct line thickness for your print driver.

The laminate can be applied to a clean surface after removing the release liner paper on the back to reveal the self adhesive. Lightly press the material on to the base material and you are ready to engrave and cut.

After engraving or cutting the laminate, weed off the unwanted material and firmly press down the remaining laminate to make a more permanent contact with the base material. Any smoke residue left can be cleaned using a plastics cleaners such as Novus 1 and a soft cloth.

Using laminates like Spectrum Lights on your engraving jobs is very easy and adds distinction and some real sparkle.

**Adding Some Zip to Marble**

Laser engraved black marble looks very elegant and is so simple to work with. Your Co2 laser system will engrave a white color and contrast nicely with the jet black marble color. The scientific portion of this engraving process is that the laser is really bleaching the color from the stone which creates the white color. Engraving black marble does not take much in the way of laser power and can be accomplished quickly with 25 watts or more.

To add some extra value to the engraved marble product decorate it with foils and engraveable laminates or use a color filling liquid. Using a color filling liquid works quickly and the color will soak into only the engraved area. Color fill liquids are available in gold, silver and bronze are best applied using a small brush. After brushing on the liquid, wipe the area clean with a soft rag to remove the excess color fill material. The result will be a permanent color that has soaked in to the stone.

Plain laser engraving on marble looks great, adding color to the marble looks excellent and is a natural up sell for your customers.

Adding impressive decoration to any laser engraved product can make a good thing better by first showing your customers you are improving your engraving techniques and second by helping to up sell your customers to a better product that they will enjoy for years to come.