Vinyl Signmakers for Jacks*

or

How to Cut Sand-Blast Designs by Machine

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I enjoy sand-blasting glass, and for a while I was happy enough cutting stencils in Contact® with a craft knife. When I started teaching a local class in glass decorating, I found few of my students were particularly adept with a knife. I bought them some pre-cut designs, and started looking for a way to cut designs with a computer. I knew that vinyl signs were made with pens installed in "plotters," but the old plotter I managed to get my hands on didn't work. While surfing the web looking for used plotters, I found the Roland Stika® line of sign cutters.

Roland has made plotters for producing engineering drawings from CAD files for many years. About ten years ago they introduced the first "Stika Intelligent Cutting Machine," the Model SCP-85. This is available with both Windows and Macintosh computer interfaces. It will cut designs up to about 2.5 by 12 inches in size. When used in conjunction with computer graphics programs, you can think of it as simply a specialized printer connected to a serial port.
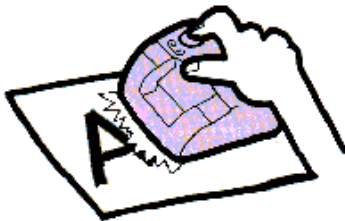
It is actually two machines in one. For me, its value is as a cutter, but it also includes a scanner. You press and hold a button on the top of the device while rolling it across a design on paper. The design can be loaded into the computer with the included software. When used with a computer, the design is used as a template, and after "vectorizing" the design it can be edited or combined with text or other elements.
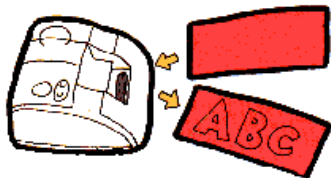
Once a design is complete, a strip of vinyl is inserted into a slot on the Stika, the machine begins to whirr, and the vinyl slides in and out of the front and back. Eventually the vinyl is ejected with razor cut outlines of the design.

The Stika also has a "stand alone" mode of operation. When not attached to a computer, you can scan a design by rolling across it, then insert and cut the vinyl. I've found that some complex designs can confuse it, and it handles only a much more limited area, but it is still impressive in this mode.

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* In many trades, a Master is a worker who is so highly specialized he can only do one thing - period. As I see it, a Jack is a Renaissance Man of the craft world. It is the Jacks who can take methods developed in one area and apply them in another. On the whole, Jacks have a tradition of sharing techniques, and of teaching "outsiders." Masters, on the other hand, have a tradition of protecting secrets, and forming guilds of exclusion. Jacks are often concerned with "good enough," while Masters focus on "the best." This applies to tools and equipment, as well as techniques and results.

Roland no longer markets the original Stika, but they do sell two newer desktop cutters. These have a parallel computer interface, and lack scanning ability. The STX-7 cuts vinyl about 6 by 39 inches in size and lists for about $550, while the STX-8 cuts 10 inch width and lists at $750. Roland, and other manufacturers, also make larger sign cutters, typically costing over $1000.

While the Stika is a luxury, it has several valuable features. In addition to speeding up the cutting process, it makes it easy to produce multiple copies of a design, and it can make very finely detailed cuts. If you are teaching sandblasting, giving students pre-cut masks provides you with a way to let students focus on one procedure at a time.

Don't worry to much about becoming robotized by the computer aspects. As an "artiste," you still have to create the original, and as a "hand glass worker," you still have to apply and peel the stencil and do the blasting. This is just a transfer tool - a sort of digital carbon paper.

Sign Makers' Vinyl

I haven't seen much in the way of specifications for the vinyl sold for commercial sign making, but I think the thickness is 3 mils. That's not enough for really deep blasting and multilevel work, but it works very well for surface decoration.

Sign vinyl often sells for less than $0.50 per square foot. That's a lot less than the $10.00 or so which is charged for photo emulsions, and about the same as you often have to pay for "shelf paper."

I ran Contact through my machine before I bought my first sign vinyl. It doesn't cut and handle quite as easily as sign material, due, I think, to thicker vinyl and thinner backing paper, but it did work. While sign vinyl may be thinner than Contact, I think it is more elastic. It seems to be easier to apply it smoothly to a surface with some complex curvature.

Transfer Tape

Once you have cut a design on vinyl, you have to stick it onto your glass without losing the alignment. Signmakers use what they call "transfer tape" to do this. This is much like masking tape, but much less sticky. You put the tape over the front of the cut vinyl before peeling off the backing paper and applying it to your glass. This can be done either before or after "weeding" (pulling off the throw-away portions) your design.

I've successfully used both masking tape and clear mylar package sealing tape for this job, but I like "real" transfer tape better. If you are careful, a piece of transfer tape can be reused several times.

Software Issues

The Stika package includes software. The Windows package for the SCP-85 series which I received was intended for Windows 3.1. It works well enough under Win '95, but its abilities to handle graphics files from other programs are quite limited. I've only been able to import uncompressed .TIF format files. I haven't been able to obtain drivers for use with other programs, and Roland no longer supports this model. I say that without complaint because of what I *can* accomplish with it, and the modest price I paid.

For symbols or clips which I expect to use repeatedly, I have created originals in Designer because I work most skillfully with that, imported the results as .DRW files into Corel Draw and exported a True Type® font, then massaged the font in Fontmonger®. That is a convoluted path, but the result is that I can use the final font directly in SignMate. That lets me insert a rather complex design element with a single key stroke, then scale or rotate it.

Where to Buy?

I bought my Stika and my vinyl on the Internet in eBay auctions. The typical price for the original Model SCP-85 seems to be about $200. These machines are popular with model builders, particularly those involved with "slot racing" cars, since they part the production of small graphics transfers from scanned images an relatively simple task.

Since the newer machines are aimed squarely at the sign making market, many commercial sign supply shops sell them. You can find sign suppliers in a big-city phone book or on the internet.