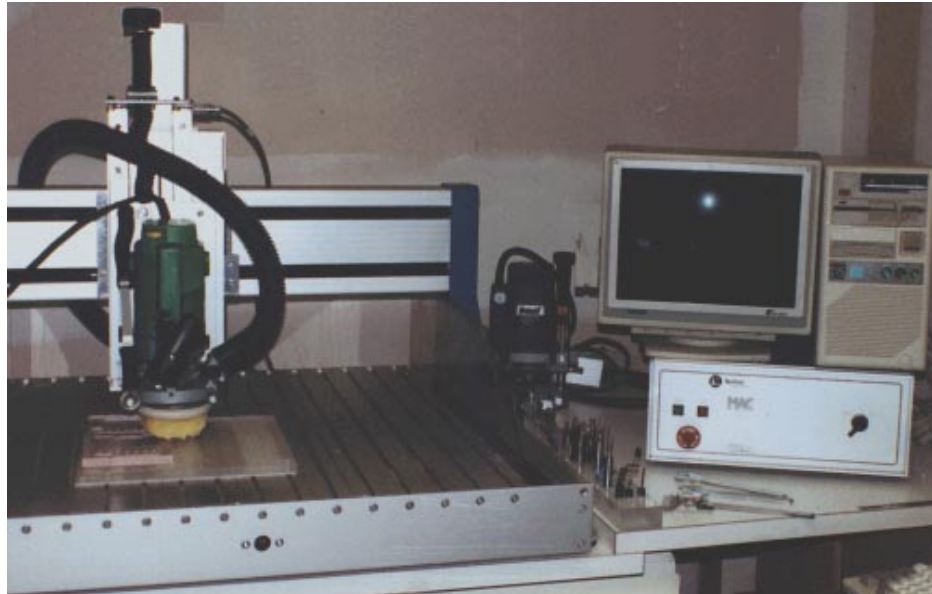


Slash Production Costs of Control Panels with Techno

If you make engraved panels of any kind – elevator panels, machine panels, control panels – you are always on the lookout for a less expensive and easier means to the end. Towards this goal, Techno presents its series of CNC routers and engravers which can quickly and efficiently cut costs and production times for producers of engraved panels.



Case in point: Custom Remote Systems, which has begun using a Techno System to make Wireless Table Panels and graphic consoles used for the remote control of media equipment.

These fashionable panels allow owners of extensive media equipment to consolidate all their individual remote controls into one convenient control station. The abilities of the Techno System have allowed Custom Remote Systems to speed up its production and cut costs, and thus expand its product line to better service customers. When Custom Remote

Systems first started producing the panels, the company made them out of plastic and had to do all the routing by hand. They would then



produce patterns on paper for the screening and the computer boards used in the panels, but would have to send these paper patterns out to other companies to do the screening and produce the boards. Only after all the ordered parts were received, which might often take weeks, could a finished product be assembled.

The Techno System has drastically changed the way Custom Remote Systems produces the Wireless Table Panels, making the process easier, cheaper, and faster.

Chester Graves, owner of Custom Remote Systems, purchased a 19.7"x 19.7" x 4" Techno Gantry table with X, Y, and Z axes, each with a stepper motor and an anti-backlash ball screw. The machinery is run by a MAC Controller, and utilizes HPGL Interface software which Graves also purchased from Techno. The whole system was easily adopted. Using the Techno System, Custom Remote Systems converts AutoCAD drawings into plot patterns, and

downloads all this information directly to the machine controller. The Techno machine can then be used to route the panel which was once done by hand, and can also cut prototypes of the printed circuit board, the screening, and the button caps.

The most immediate effect of the system was that it allowed Custom Remote Systems to switch the material it was using for the body of the panel. Where once the company was making this out of plastic, it now makes it out of solid surfacing materials, most often Corian (from DuPont, Wilmington, DE), but also from Fountainhead (El DuPont, Odenton, MD) or Avonite (Los Angeles, CA). In addition, the Techno System can easily be used to produce panels out of aluminum, brass, or wood.

The financial savings from the Techno System has been tremendous. Graves has slashed his overall costs in half. For example, the company once had to pay \$150.00 per panel for an outside manufacturer to do the screening. It can now do the screening in-house for little more than the cost of the material, \$2.50. Wireless Table Panels produced by other companies cost \$4000.00. Thanks to the Techno System, Custom Remote Systems is able to charge between \$1000.00 and \$2000.00.

The time Custom Remote Systems has saved with the Techno System is also apparent. Whereas the routing of a panel body once took 4 hours to do by hand, the Techno machine, using a router bit, can do the panel in 15 minutes. Then, the same Techno machine can be used to do the engraving on the panel. The fact that the Techno machinery can do both the routing and the engraving immediately increases efficiency dramatically. The whole process of making the panel once took about 5 days — a number that

could vary greatly depending on the delivery time of parts. A delay in shipment would mean the company could not produce a unit. But Custom Remote Systems no longer needs to wait for deliveries. It now makes the panels in 2 days, and if needed, can produce one in 8 hours. The fact that the company is no longer dependent on outside manufacturers has been a tremendous benefit of the Techno System.

Techno offers a wide variety of Gantry Systems to meet your needs. Table sizes range from 24"x20" up to 60"x120" so you can find the size that fits your purposes — or use a large table to produce multiple panels at once, thereby doubling, tripling or even quadrupling production. All tables feature extruded aluminum table plates for easy mounting as well as ± 0.1 mm repeatability and accuracy.

In addition, the latest Techno machine, the DaVinci PC-Driven Machining Center can be used to engrave panels on a smaller scale. The compact 70 lb machine offers a work area envelope of 8"x8"x5" and features built in drive electronics, 3 axis linear and true circular interpolation, and both position and repeatability accuracies of < 0.05 mm. Incredibly, the Techno DaVinci is now available, with PAL software, for under \$10,000. This is a truly unbelievable price considering the savings in time and money it will mean for panel production down the line!

As Chester Graves and Custom Remote Systems discovered, Techno Systems provide the means to more cheaply and easily engrave and route all types of panels. The systems are simply run from an ordinary PC through the MAC machine controllers and the easy-to-use software. Custom Remote Systems' time and cost savings of 50% and 60% can soon be your savings, with the addition of a Techno System.

AFFORDABLE CAD/CAM SERIES Half Price Stores Makes Instant Logos, Letters, and Designs with Revolutionary, New Hot Wire Cutter

Half Price Stores, a division of Richmond-Gordman Inc. is an off price company which offers national name-brand items to budget conscious shoppers. It is thus very important for the stores to have signs allowing for identification of these name-brands. The way Half Price Stores once did this was by purchasing signs made from styrofoam from other companies which specialize in vendor lettering and logos. However, with twenty stores, and hence a large amount of signs, they soon realized that this setup was much too expensive, and that it would be much cheaper if they could create the signs in-house. However, most of the machines which Half Price Stores found on the market ran between \$35,000 and \$50,000. The company has a tight budget, and these machines were prohibitively expensive.

Then the company discovered the Acme Computerized Hot Wire Cutter. The Acme Cutter makes sign-making easy. First, the pattern or lettering for the sign is drawn on a computer screen. This can be done simply by calling up one of the 25 patterns and 2 fonts supplied with the system (others sold separately). If one of the pre-programmed patterns does not fit your needs, you can scan a pattern from an existing font, shape, or logo, directly into the system. And if you want a brand new pattern, you can design it yourself using the MasterCAM® software which can be purchased with the system. Once you have the pattern, you merely mount the block or blocks of styrofoam



onto the table of the cutter, and press a button to download the pattern to the controller. Through the use of a PCMAC100 controller card and MasterCAM software (Techno, New Hyde Park, NY), the Hot Wire Cutter automatically cuts the pattern out of the styrofoam exactly as it was designed on the screen.

The Acme Cutter has many features that make it advantageous for those doing in-house sign-making. The standard size for the machine

is 24"x24"x20". This means that you can cut as many shapes at once as you can fit in this space. Hence if you are cutting 1" thick styrofoam, you could easily stack twenty pieces and cut them all in the same shape with one press of a button. This is a huge advance for those who might choose to cut signs by hand. While manually you would need to cut each piece separately, with the Acme cutter you can cut all your pieces in a stack. You can create signs in 1/10 or 1/20th the time it would take by hand, depending on the amount of signs you need and the number you can fit on the table.

In addition, the signs of are a much better quality than could be created by hand. Acme Foam reports that the accuracy of the machine is "ridiculously precise for cutting foam." Whereas, 1/8" error is usually plenty for sign cutting, the Acme Computerized Hot Wire Cutter is accurate to two or three decimal places! This means that every sign will be virtually exactly the same, every time.

Perhaps the biggest advantage of the system is its price. Whereas other comparable systems cost up to \$50,000, the basic Acme system costs under \$9,000. With other options, including the MasterCAM® software and a router attachment which allows the system to cut laminated foam and other materials, the system still sells as low as \$15,000 – 1/3 the price of other systems.

The Acme cutter has cut Half Price Stores' dependence on outside sign makers, and hence saved them time and money. Now they merely scan the company logo or lettering they need, and automatically cut as many copies as necessary from the stack of styrofoam blocks. They then mount the logos onto their trademark oversized triangle background (also cut with the machine), and paint as needed. At present, Half Price Stores has created as many as 100 vendor logos using the Acme system. According to Will Champinoy, of Half Price Stores, the system has just about paid for itself already. He estimated that purchasing all the logos for the twenty stores cost about \$10,000. This is slightly less than they paid for the machine. However, Half-Price Stores' customers are opportunity buyers. Hence the vendors at the stores are constantly changing, and signs may

need to be changed every 6-8 months. If the signs are purchased from another company, the \$10,000 must be paid every time vendors change. However, with the Acme machine, after the initial investment, all the company needs to buy when new signs are to be made are the raw materials, styrofoam and paints. Hence the savings over time is tremendous.

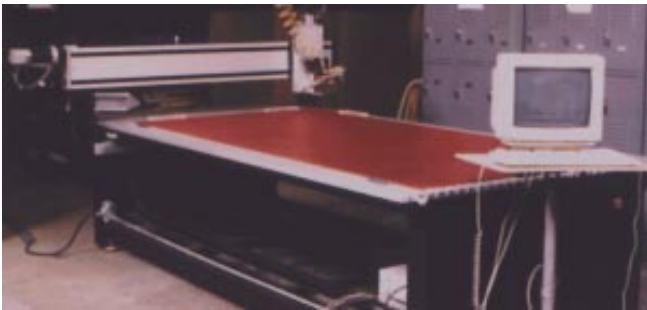
In addition to the flexibility afforded by the Acme machine for changing vendors, Half Price stores has been able to use the cutter for applications beyond vendor identification. One important use has been to create repetitive balance treatments. Architecturally, all the departments in Half Price Stores look similar, hence they depend on signs to distinguish one department from the other. They have thus utilized the repeatability of their Acme cutter to make balance treatments and create images within each department. For example, they cut multiple dolphin shapes and then mounted them in layers to create an image for a swim shop. Similarly they were able to create visual presentations for their juniors' and children's shops, giving each generic section of the store its own identifiable look. This is something the company never attempted when they were purchasing signs, and which would be both expensive and tedious to do by hand. However, it was easy with the Acme cutter.

As evidenced by Half Price Stores' success, the Acme Computerized Hot Wire Cutter has many benefits for sign-making. The cost savings, over comparable machines and over purchasing signs or manually creating them, is in itself tremendous. Add to this the accuracy, repeatability, and time savings provided by the system, along with the various options for patterns and the machine's routing potential, and the Acme system could change the way you make, purchase, and/or use signs in your business. Just as it did Half Price Stores.

AFFORDABLE CAD/CAM SERIES

Expanding Your Business With CNC Routers

A Techno CNC router paid for itself on the first job by producing an order of aluminum signs with acrylic letters for a bookstore chain in about 1/10 the time that would have been required to produce them by hand. The push-through acrylic letters had to be produced to demanding tolerances that would have been difficult or impossible to meet by hand. The Techno CNC router has helped Creative Accessories enter new markets by producing signs and related specialty items from a wide range of materials including plastics, aluminum, wood and other materials in 1/5 to 1/10 of the time that would have been required by hand. Creative Accessories developed a vacuum table for the machine that provides further productivity increases by allowing materials to be quickly clamped and unclamped to the table.



Creative Accessories is a 25-employee company that is constantly seeking new niche markets for its products. The company's primary product is signs and displays but it also produces a wide range of specialty items, most of which are made from a variety of acrylic plastics and woods. For example, the company has recently begun producing carved wood signs and marketing them through sign stores and catalogs. In the past, the company produced these items using traditional hand and power tools including band saws, shapers and routers. This meant that a considerable amount of time was required to

produce each piece and that accuracy was dependent on the skill of the person doing the work.

The difficulty of producing these products by hand came to a head recently when the company had the opportunity to bid on a large order for display signs to be used by a bookstore chain in their coffee shops. The displays each consist of a rectangular aluminum display cut out in order to insert acrylic letters. Each of the letters is flanged so they are retained in the sign. Creative Accessories management realized that the cost of producing the job with manual methods would have been too high to get the order and the accuracy that could have been achieved would probably not be up to the customer's demanding standards.

The company examined several CNC routers and selected the Gantry System from Techno-*isel*, New Hyde Park, New York because of its accuracy, relatively low cost and ability to interface with popular software packages. It then submitted a bid for the bookstore displays stating that it would purchase the machine if it received the order. When it got the order, Creative Accessories immediately ordered the router and began work. The company found it could program the letters and displays in a timesaving manner using CASmate-Pro sign design software by Scanvec. Techno customer support was very helpful in providing guidance on the cutting speeds and type of bits required to machine aluminum and acrylics.

While the aluminum display was easily clamped to the machine table, attaching the softer acrylic letters without damaging them proved to be a bit more of a challenge. On this first project, Creative Accessories used double-sided carpet tape which held the letters without difficulty but made it somewhat time-consuming to remove

them. Later, the company developed a universal vacuum deck with multiple chambers that can exert tons of clamp-down force. This deck is being used for all of the company's internal plastics work on the machine and is now being offered for sale. *Techno-ise!* is the first distributor to sign up. The ability to quickly clamp and unclamp parts dramatically improved the profit-making potential of the router. The first job covered the cost of the machine despite the fact that a fair amount of time was required for learning how to program, set up and run the new machine. In general, the company has found that it can produce signs and other specialty products in about 1/10 of the time previously required. Since then, Creative Accessories has significantly increased its business in a number of areas due largely to the increased productivity and accuracy which it can achieve with the Techno gantry system.

For example, Creative Accessories has picked up a considerable amount of wholesale work for other signmakers that still produce signs by hand. These include carved wood signs, plastic signs and electrified signs. Small carved wood signs normally take three to four hours to produce by hand, yet can be cut on the router in about 15 minutes. CASmate Pro has proven to be quite a valuable tool in this regard. In particular, the program's scan-to-cut feature makes it possible to scan a logo or other design and create a vector image with square corners and sharp angles in no time at all. The program downloads quite easily to the Techno gantry system.

Quality of the work produced by the company has also been greatly improved. The machine has a resolution of 0.0005 inches which is about 100 times the precision that can be achieved by hand. So the letters and specialized shapes produced on the router are far more precise than hand-cut, and any required copies are identical to the originals. The company trains its employees to achieve high standards all the way from design through production and finishing; and the router makes it relatively easy to achieve these standards.

The strength and rigidity of the table was also important. The Techno machine is constructed from extruded aluminum profiles which can support all the materials that Creative Accessories uses and provides easy clamping. The machine also has four ground and hardened steel shafts and eight recirculating bearings in each axis. This shaft and bearing system produces very smooth play-free motion which produces high quality cuts.

The quality of the cuts produced on the Techno router is directly related to its unique design. Most sign routers use small diameter (less than .5") acme screws and brass or plastic acme nuts while the Techno routers all use .63" (16 mm) ball screws and anti-backlash ball nuts. Ball nuts roll as compared to acme nuts, which slide. This means that the ball screw system transfers over 90% of the motor power to produce cutting force, while acme screw systems typically only transfer 35% of the motor power. The rolling action vs. sliding also means less wear, longer life and greater rigidity, essential for producing clean cuts in plastics and metals. The patented anti-backlash ball nut on the Techno router also produces more accurate cuts for making inlays with clearances down to the machine resolution.



Perhaps the biggest advantage of the router, however, was its low price. With the time savings and accuracy provided by the Techno router, Creative

Accessories can offer its customers better products at a lower cost. This has made it possible for the company to double its business, while increasing profit margin at the same time.

AFFORDABLE CAD/CAM SERIES

Techno-isel CNC Router Is Sign Of Prosperity

Eye-Catch Signs increased its sales three times with a Techno CNC router that also improved its productivity over 300 percent.

Innovative manufacturing processes may be late in coming to eastern Canada, but one Nova Scotia-based company has made up for any lost time.

Eye-Catch Signs has tripled its sign business volume in the last four years since installing a small CNC router which improved productivity over 300 percent on cutout and inlaid letters and carved wood signs. This makes it possible for Eye-Catch to beat the prices, quality and delivery time of competitors who still produce letters and signs by hand, Eye-Catch officials say.

Using a gantry system from Techno-isel, Eye-Catch can produce a typical high volume product, 5" cutout letters, in less than 5 minutes compared to the 45 minutes that the same job used to take by hand.

Productivity gains of this magnitude and higher have made it possible for the company to increase its profit margins, even while lowering prices to its customers.

Quality of the work produced by the company has also been significantly improved. The machine has a resolution of 0.0005" which is about 100 times the precision that can be achieved by hand, company president George Jeha says.

"So the letters and specialized shapes produced on the router are far more precise than hand-cut and any required copies are absolutely identical to the originals," he says.

Contributing to this success is the fact that the company trains its employees to achieve high standards all the way from design through

production and finishing and the router makes it relatively easy to achieve these standards, Jeha says.

Eye-Catch Signs produces cutout letters made of wood, plastic, bronze, aluminum, foam and other materials in sizes ranging from 2" to 50." In the past, the company produced these letters using jig saws, band saws,



files and sandpaper. The time required to produce a 10" letter by hand was about 45 minutes, while a 36" high letter took two hours.

Now, the company can program any letter in two to three minutes using CASmate-Pro sign design software by Scanvec. It takes only a few minutes. The operator mounts the material on the table and touches a single button to cut the pattern in about two minutes.

Additional letters are produced even faster because the program can be repeated as many times as needed to cut multiple letters out of a single piece of material. The program automatically nests these letters to use as little material as possible, which provides additional savings compared to manual methods.

The increases in productivity that were achieved with the new router have dramatically improved the performance of shop personnel. Each person now does three or four projects per day, while in the past each person would be lucky to complete just one project per day. Being a low cost producer makes it possible to price products more competitively and increase sales

volume. The fact that quality has gone up and delivery lead time has been reduced has further increased sales volume. But higher productivity means the company is able to handle this volume without adding workers. Eye-Catch has added a number of employees for new business areas such as architectural metal so overall employment has actually increased.

The machine also has four ground and hardened steel shafts and eight recirculating bearings in each axis. This shaft and bearing system produces smooth play-free motion.

Techno routers have anti-backlash ball screws, for play-free motion, that make it possible to produce circles that are accurate to the 0.0005" machine resolution and to produce inlays with clearances down to the machine resolution. The ballscrews have "excellent" power transmission due to the rolling ball contact between the nuts and screws, Jeha says. This type of contact also ensures low friction, low wear and long life.

Eye-Catch was also attracted to the software that the machine uses. MasterCAM can import

and export files from the DXF, IFGES, ASCII, CADL, and ANVIL formats which makes it possible to handle pre-designs from virtually any program. CASmate-Pro has import and export features and can also handle EPS files from illustrators. CASmate-Pro takes advantage of the Windows clipboard and can use any font available through Windows applications. This is important since Eye-Catch receives pre-designs from customers in a wide variety of formats and its own designers also use a number of different programs.

The Techno system also works with all leading CAM design packages. A new user can be trained to use the software in just a few days.

Some competitors now buy cutout letters from Eye-Catch because they can't compete on price or quality if they were to produce them themselves, Jeha says. This has made it possible for the company to triple its sign business while increasing profit margin at the same time. Among other things, this higher volume helped finance a new larger building into which the company recently moved.

