

Inexpensive But Accurate CNC Router Aids Signmaker's Expansion



The Techno router makes it possible to produce 2D and 3D images faster and with more accuracy.

A Colorado signmaker has increased the breadth of its product line and boosted its revenues through the use of a new router that provides the accuracy associated with high-end machines at a much lower price. LCI Signs and Ironworks has long been in the business of producing metal silhouette signs for gates and entryways as well as decorative furniture. Owner Dave Wortman began adding wood accents to increase the appeal of these signs but was limited by the long amount of time it took to route the accents by hand and the fact that he was limited to working in 2D. Wortman was interested in purchasing a CNC router to expand that aspect of his business but the machines he was aware of were either too expensive or

not accurate enough. "Then I heard about Techno's new LC router which is fully servo-driven and includes ball screws and antibacklash ball nuts on all three axes for highly accurate motion control," Wortman said. "I haven't seen any other machines in their price range with these features. This machine has dramatically expanded my capabilities by making it possible to produce beautiful 3D images as well as very accurate 2D designs in very little time. In the first four months, it has already generated about \$4,000 of additional revenue, so it should easily pay for itself in the first year."

LCI specializes in producing personalized signs to identify homes, businesses and communities. With

special reflective materials, the signs make it easy for friends, families and neighbors to find the home, not to mention emergency personnel when every second counts. LCI ornamental signs are constructed from recycled steel and finished in a very durable powder coat. The company offers a wide range of standard decorative images including wildlife, horses, pets, recreational activities and decorative images. The lettering background is easy to read because it is made from the same material that some highway and street signs use. The company attracts new customers by displaying at crafts shows, their showroom and through its Internet site at www.lcisigns.com. Its general store features items ranging from a switch cover finished with copper patina at \$18.00 to a rustic log framed mirror with metal art for \$225.00. LCI also produces custom pieces such as machined parts, artist's silhouettes and sign brackets, and just about anything else that's made from metal, wood or plastic.

Limitations of working in metal alone

"Our metal silhouette signs have proven extremely popular but working in metal alone has inherent limitations," Wortman said. "I wanted to expand our capabilities by being able to incorporate wood into metal signs. I began using a hand router and had no difficulty in cutting out letters and very simple designs. But I was limited by the fact that all I could produce with power tools were very simple 2D patterns; and a long time was required to produce even the simplest designs.

I started browsing the Internet looking for computerized numerical control (CNC) routers that could meet my requirements. The critical issues for me were that I needed the ability to produce large signs to a high level of accuracy in order to produce inlays with a tight fit and complicated 3D images. I didn't have any problem finding machines with these features but the cost was beyond what I could afford, \$30,000 and up in nearly every case. It was beginning to look like it would be impossible to take advantage of this market opportunity that seemed to have so much potential."

Then Wortman heard about Techno's new low cost LC series CNC routing system. This machine provides a number of critical features that allow it to deliver accuracy to a level that has previously only been available from machines at a much higher cost. Ball screws are provided on all three axes, offering smooth motion, a high level of accuracy and repeatability, and minimal maintenance. A closed-loop servo control system provides constant position feedback, higher power, and smooth continuous motion that eliminates the possibility of losing position in the middle of a part. The LC series machine includes a heavy steel ground stress-relieved base and an aluminum T-Slot table that can be easily converted to a vacuum table by installing the Techno vacuum table accessory kit. The machine comes fully assembled and includes Techno's Windows-based CNC G-code Interface with free lifetime software upgrades.

No comparable machines at this price with this accuracy

"The LC series was the only machine I have seen that has everything I need at a price that I can afford," Wortman said. "The machine was brand new



Techno CNC systems are so easy to use that customers start producing parts right away.



Techno routers interface with all industry standard G-code CAD/CAM sample packages.

at the time I bought it so I couldn't see it in action locally. But I did visit someone nearby using an earlier Techno machine based on similar technology and I fell in love with it at first sight. The machine was clearly very versatile and its owner told me that it required very little maintenance.

"The ability to add wood and plastic to our signs has added an important new dimension to our business," Wortman said. "We have taken photos of people, their pets, their property, and anything else that is near and dear to them and carved them into wood with the router. In some cases, we inlay the wood pieces into metal signs or ornaments. We are also carving

pictures into tabletops, cabinetry, headboards, and other furniture or crafts. With the CNC router, the only limitation is your imagination. Clients have asked us to create carvings that show views from their property, wildlife from their pictures, custom cars and many other designs. The wood inlays add character, warmth and personality to traditional silhouette signs. We can offer this type of product at a very reasonable price because nearly all of them are created from digital or scanned conventional photos with very little manual effort. These are jobs that would have been absolutely impossible to do with power tools. The new machine has also greatly increased the speed with which we can do the simpler 2D routed signs, such as plain lettering."

Wortman said that the economics of the new machine are difficult to argue with. "My investigation showed that this new machine provides the accuracy and size needed to produce high-quality 3D images at the lowest possible price," he said. "By increasing our capabilities, it has opened up several new markets while reducing our costs for producing standard wood components. Just as important, the added value provided by the wood inlays has increased the price that we can get for our existing products such as silhouette signs and furniture. Spending money on an expensive piece of machinery is always a difficult decision for a small, family-owned business. But when you can quickly get your investment back through increased revenues, it makes the decision much easier. All in all, the low cost and high quality of the new Techno LC series machine offers an unbeatable proposition for any small sign maker that does not currently have the capability to accurately reproduce 3D images."