

Innovation meets artistry, producing an award-winning, mass-engraving solution

Overview

Name: Leonardo Di Benedetto

Company: Artesà

Location: Barcelona, Spain

Industry: Engraving

Product: [CorelDRAW Graphics Suite](#)

“Along with the good reputation of Corel as a company and CorelDRAW's cost-effectiveness, one of the main reasons we chose this product is that it's so well known in the graphic design world. And that benefits customers buying the Artesà.” – Leonardo Di Benedetto

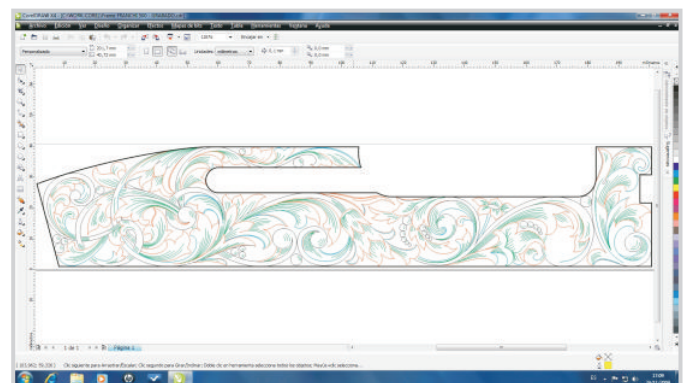
As Leonardo Di Benedetto accepts the silver medal for innovation at the International Exhibition for Inventions in Geneva, he knows that he and his company have taken a big step forward. But more important than the prize itself are the interest and admiration his machine is receiving from the exhibition visitors, especially artisans and professionals from the prestigious Swiss watch industry. After the event, the CEO of the Barcelona-based firm Artesà knows that there's no time to lose – customers are waiting for his interesting invention, which now needs to be manufactured and marketed.

That was in April 2008, but innovation has always been a part of Di Benedetto's life. Listening to master engravers and customers, he realized there was a market for a machine that could reproduce



A gun barrel casing engraved with the Artesà

hundreds of objects is usually not feasible. However, conventional mass-produced engravings cannot reproduce the same level of quality and beauty, because the techniques used are very different.

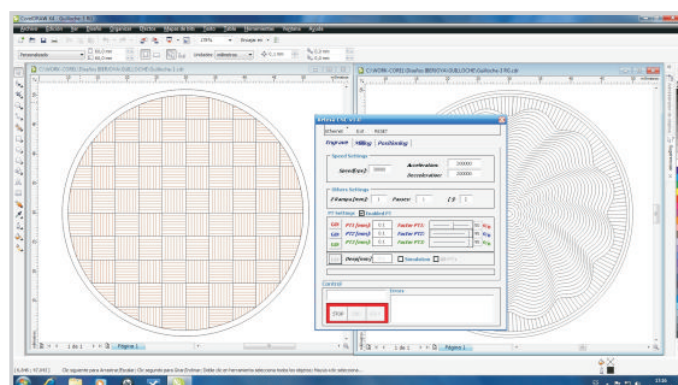


Engraving designs in progress using CorelDRAW

Technical Prowess Based on Artistic Skills

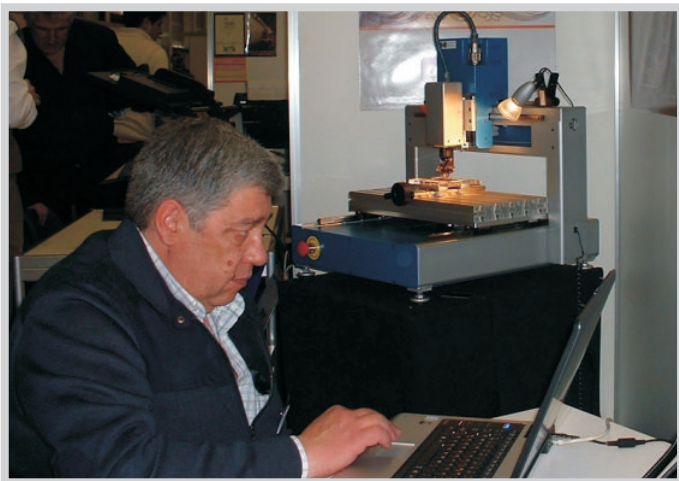
This conundrum is what started Leonardo Di Benedetto thinking about how engravers actually work. When engraving an object by hand, the artisan performs a downward and upward scooping movement with the chisel each time a cut is made in the surface of the object. So Di Benedetto set about designing a machine that would work in exactly the same way. The result – the prototype presented at the Geneva inventions exhibition – was the Artesà. Unsurprisingly, the name comes from the Catalan word for hand-crafted. The machine is a real innovation in that the lines it engraves imitate the artisan's approach, using a curvilinear or open polygonal trajectory achieved with non-rotating cutting tools. **The finished product is a design that has the brilliance and precision of a master engraver's work.**

Alongside the engineering design of the Artesà machine itself, Leonardo Di Benedetto needed to find a way to produce the graphic design on a computer, then communicate this to the machine. **“Choosing the design solution was the easy part,” remembers Di Benedetto. “I know the CorelDRAW Graphics Suite well and have been using CorelDRAW since**



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intricate designs on jewelry, hunters' rifles, watches and other objects. For one or two articles, hand engraving is the perfect solution. However, many customers need the same quality produced in large quantities – especially for jewelry and objects that can be given to customers as business gifts. Hand engraving



Leonardo di Benedetto working on a design with his invention beside him

Version 5, which is about 15 years now! We decided to use it as a CAD program to produce two-dimensional vector drawings, and it does this job very well. With that part of the software solved, we were able to concentrate our efforts on developing our own CAM program. It's a CorelDRAW plug-in in Microsoft® Visual Basic® that pilots all the machine's movements."

The company started by using CorelDRAW® and Corel PHOTO-PAINT® to identify and differentiate all the various types of lines within the drawing. It is crucial to be able to determine and control the direction, the color, and the starting and finishing point of each line in the design in order to elicit the appropriate response from the machine's engraving heads. This is where the plug-in comes in.



A few examples of the beautiful engravings produced by the Artesà machine. The letter S is an original design by Sam Alfano, www.MasterEngraver.com

Multiple Disciplines in a Compact Machine

The CAM plug-in – called Artesà CNC – takes the input from CorelDRAW, converts it into 3D tool paths, and controls all the machine's movements to reproduce the design as faithfully as possible. The engraving heads turn and move up and down the object in the same way as the artisan with a chisel. "Developing the plug-in was almost a project in its own right," says Di Benedetto. "After all, the machine combines a range of disciplines, such

as mechanical, electrical and electronic engineering, computing, communications, engraving techniques and graphic arts. Nothing like it has ever been developed before. So we took our time with the plug-in and went through a lot of trial and error before finally getting it right!" The company intends to continue work on the software to add features and functions in response to customer feedback and suggestions.



Complete, Easy-to-Use Solution

The Artesà is a complete solution that customers can implement and start using rapidly. The machine itself is compact, and the software is both easy and enjoyable to use while allowing users to pilot all the machine's complex movements – even if they have little understanding of engineering. "Along with the good reputation of Corel as a company and CorelDRAW's cost-effectiveness, one of the main reasons we chose this product is that it's so well known in the graphic design world. And that benefits customers buying the Artesà. Using a familiar tool means that their learning curve will be much shorter. They'll be learning to use a completely new type of machine, so it's just as well that the software side of things won't take up too much of their time."

Future Projects: Top Secret!

Since the prototype that won Leonardo Di Benedetto his silver medal for innovation in 2008, the Artesà has come a long way. It has recently gone into production and the first machines will be delivered to customers in the first quarter of 2010. Each will include a licensed copy of CorelDRAW along with the plug-in Artesà CNC. So what's next for Leonardo Di Benedetto? "In the short term, we'll be staying close to our customers to glean all their comments about the Artesà and incorporate

their feedback in our solution as far as we can. Looking further ahead, I'm thinking up some new innovations but keeping them secret for now!"

To learn more about CorelDRAW Graphics Suite, visit www.corel.com/coreldraw