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A vision of higher productivity through technology

The management of Visioneering Corp., an industrial / commercial lighting manufacturer located in Toronto, ON has kept true to their vision of what it takes for corporate growth.

Visioneering has a solid history of being on the leading edge of investing in sheet metal fabrication technology. Indeed, Visioneering was one of the first Canadian companies to purchase CNC punching and bending equipment. And its vision has paid profits: Today, Visioneering is the largest independent lighting manufacturer in Canada. “We are not afraid of new technology,” explains Santino Nemi, vice president operations / manufacturing. “We stay on the cutting edge with a high amount of investment. During the past five years, while many companies were slashing budgets, we have been reinvesting twofold.”

Visioneering was founded in 1952 by Daniel Wiener, as an industrial / commercial lighting company. By the early 1980s, Wiener’s son Bill, the company’s current president and owner, joined the company. Bill Wiener changed Visioneering from a hard-tooled company into a more soft-tooling and flexible manufacturer. Today, from design to the finished product, the company manufactures a wide range of lighting and non-lighting products for customers around the world in a modern 210,000 square-foot plant and head office in Toronto.

The company’s vision was also to keep its manufacturing plant inside of Canada. “Our philosophy is that we won’t chase lighting business around the globe,” explains Nemi. “Some companies say that if they can’t make their product competitively in Canada, then they will manufacture in China, Mexico, or India. By contrast, Visioneering doesn’t want to move. We have a flexible manufacturing company located in Toronto, and we are going to do whatever it takes to remain competitive with our facility, our people, and our equipment. We have

changed our products from commodity goods to more specialty products in lower volume and keeping them with very short lead times.”

Technology-driven company

With the addition of state-of-the art CNC fabrication equipment through the years, today Visioneering has the capability to manufacture its products from materials such as cold-rolled steel, stainless steel, and aluminum with satin coat, galvanized, reflective, vinyl-coated, pre-coated, and perforated surfaces. Within its large array of fabrication manufacturing equipment are CNC turret punch presses and press brakes. A number of high-speed roll-forming lines provide high-volume production of rolled sections. Visioneering’s equipment and production staff allow the company to be both a custom fabricator and a mass producer of products. While a dedicated manufacturer, Visioneering also does some select contract manufacturing.

As Visioneering advanced its goal toward increased flexible manufacturing, the company increased its punching capability to avoid bottlenecks in that area of production. According to Nemi, once punching capacity was increased, the next bottleneck became bending. “We couldn’t keep up with bending. We had all shifts and all machines operating 24/7. Another challenge was bending large 4 ft. and 8 ft. fixtures that are common in the lighting industry. These parts are cumbersome on a conventional press brake. We needed another solution.”

Finn-Power EBe servo-electric bender

Visioneering began its search for the latest bending technology. “I had a preference to eliminate hydraulics wherever possible on press brakes and other equipment,” says Nemi. “The latest trend in the industry is servo-electric motors...and we wanted to have the leading edge in



The Finn-Power EBe servo-electric bender has allowed Visioneering the flexibility to redesign many of its products.

bending equipment.” After extensive research on bending products on the market and a visit to Finn-Power’s bending technology center in Italy, Visioneering chose the EBe servo-electric bender. The EBe was delivered in December, 2007, and the company began making parts within two weeks of installation.

Finn-Power’s servo-electric EBe provides the high bending quality required in demanding applications. This is achieved through precise control of bending axes, fast and smooth bending, open programmability, and construction that is immune to variation in thermal conditions. The EBe bending operation cycle is fully automated -- from the loading of the flat parts to unloading the bent components. It provides complete bending automation, including manipulation and rotation during the bending sequence, bending, and unloading of the bent component.

The EBe works the edges of the panel. Generally, the process starts at the external edge of the sheet and continues to the inner part of the sheet, working one side after another in sequence until all bends have been completed.

During the bending action, the upper tool of the bending unit holds the required portion of the sheet in the proper position. Two blades, mounted on the C-frame, manipulate the protruding portion of the sheet. The C-frame moves vertically and horizontally. The motion is programmable according to material type and the required bending angle. The bends can be made either upwards or downwards, depending on whether a positive or negative bend is required, without turning over the piece.

Redesign advantages

The Finn-Power EBe has allowed Visioneering the flexibility to redesign many of its products. Prior to acquiring the servo-electric bender, most of Visioneering’s parts were constructed with three components – the body and two end caps. The EBe can make these parts with just a single part, and today the company is fabricating its products with one-piece flow. “As a result of the EBe, we have increased flow, increased quality, less punching, less material handling, fewer part numbers, faster cycle times, reduced floor space for work in process (WIP), and elimination of such secondary operations as spot welding and riveting,” says Nemi. “The EBe has performed remarkably well, and it can easily do the job of three press brakes. The average cycle time on a two-sided part is 28 seconds...and 56 seconds on a 4-sided part. There is no longer a bottleneck in the bending area. The EBe is eating up all the material we can punch.”

With certain parts, Visioneering discovered they could eliminate fasteners completely with the EBe by using fabricating tabs and slots into

the part. “We are able punch a slot slightly larger than the material thickness and the EBe’s accuracy is so good that it can find the slot when it is bending up,” says Nemi. “That’s a testament to the machine’s outstanding repeatability and accuracy. This eliminates secondary operations and makes a single part that is ready for painting.”

Some of the EBe features highlighted by Visioneering include:

- **Automatic Tool Change (ATC)**-Reduces set-up time and operator error. ATC automates the changing of upper tool dimensions. With this option, the EBe is able to run unattended. “We are able to switch from one part to the next without having to worry about air gap or V die changes for different bend radiuses,” explains Nemi. “In addition, changing from heavy gauge to lighter gauge is all controlled automatically.”
- **Additional Upper Tool (AUT)**-The AUT mechanism changes the upper tool mechanism by lowering an additional tool below the standard upper tool segments. “Most of our products have forms such as an emboss, a knock out, or a louver,” says Nemi. “The AUT feature allows us to make the bend without damaging the formed feature.”
- **Additional Short Blades (ASP)**-The ASP option is installed within the C frame and consists of two numerically controlled carriages, sliding from the sides on linear guides. Two independent axes allow symmetrical and asymmetrical positioning. The carriages can carry different tools, which can be easily changed according to product requirements. The short blades can be mounted onto the carriages for panels that require partial bends not occurring on the same line lengthwise, or when ‘small wings’ need to be bent in order to weld corners. “We have some very tight bends that ASP tooling allows us to make on the full length,” says Nemi.

Service is key

Another important consideration to Visioneering was local service. “Finn-Power’s service and factory support was a critical decision maker for us,” says Nemi. “Maintenance issues with the servo-electric EBe are a lot less than comparable hydraulic machines. The maintenance intervals are few and far between. And Finn-Power’s teleservice for most diagnostics and upgrades is a great feature.”

Skilled labor shortage and predictability

The EBe has also helped alleviate the effects of the skilled labor shortage in Canada. According to Nemi, when demand exceeded Visioneering’s capacity, the company brought in new labor. “Press brake bending on many parts, specifically the larger more complex forms, couldn’t be left to a new employee or a temporary employee,” says Nemi. “With the EBe, we have instant extra capacity. Only a skilled programmer is needed to allow the machine to operate efficiently. You don’t need a skilled press brake operator to operate the EBe.”

The EBe can also transition seamlessly into second shift. “Unlike a press brake, where you have to explain to the operator what to look for, what the bend sequence is, etc., with the EBe, it’s just a matter of unloading the parts and put them on the skid,” explains Nemi. “The EBe has also allowed us to schedule and forecast our production with much more certainty. The bender doesn’t take washroom or coffee breaks. We have been able to manufacture some of our customers’ private label and proprietary products that we weren’t able to do before. We can make them identical and offer new alternatives to other customers to be more cost effective.”

This story was supplied by Prima Finn-Power North America Inc. (finnpower.com), Arlington Heights, IL.