

**MARKET**

Personal protective clothing

LOCATION

Ohio, U.S.

CHALLENGE

Greater efficiency in marker-making to maximize material savings and support rapid growth. Increased cutting room productivity.

BENEFITS

Marker efficiency of 89-92%. Greater flexibility and minimal material wastage, reliable high-quality cut for tough materials, rapid return on investment.

LECTRA SOLUTIONS

DiaminoFashion Expert and VectorFashion 2500.

Fire-Dex Beats the Heat with Lectra DiaminoFashion Expert and VectorFashion

Explosive growth at Fire-Dex creates need for innovative marker-making and automated cutting solutions



Present in nation-wide firefighting efforts for a quarter of a century, the U.S. company Fire-Dex is now celebrating its 25th anniversary manufacturing quality protective turnout gear for firefighters and emergency response personnel. Their structural firefighting garments—coats, pants, gloves, and knit hoods are compliant with the National Fire Protection Association standards. All their products are developed and manufactured in the company's ISO 17025-accredited R&D and testing facilities in Medina, Ohio.

Fire-Dex is famous for its customizable suits and holds the world record for delivering the largest order of firefighting jackets in history. Prior to acquiring Chieftan Safety Manufacturing in September 2008, Fire-Dex was awarded the WeatherHead 100 as one of the fastest growing companies in Northeastern Ohio. Recognized as a leader in the industry, Fire-Dex is known for its excellent service, fast delivery times, and state-of-the-art technology.

Rapid growth, highly specialized fabrics, and reduction in costs call for efficient marker-making and a powerful cutting solution.

According to John Karban, Director of Manufacturing at Fire-Dex, marker-making prior to the cutting phase has been an area of exponential expansion. Before acquiring Lectra's solutions, all markers were made manually by a highly-trained staff member. Considering their reputation for technological excellence, Karban said they decided to look into acquiring CAD/CAM solutions to help with the manufacturing.

"Fire-Dex has a culture of continuous improvement which acts as a change agent, challenging us to stay on top of technology and industry trends," he said. "It was only natural that we contact Lectra to see what they could do to help us improve."



Fire-Dex's manual marker-maker is able to achieve exceptional efficiency levels. Any CAD system they acquired would have to meet that level as well as offer advanced speed. "It takes a long time to train a manual marker-maker to that level of expertise," Karban said. "Given our rapid growth, we didn't have that kind of time. We needed to focus on training new staff in other areas of production."

Costs were another issue, as the specialized fabric used for firefighting gear can run up to \$80 per yard. One of the most frequently used material in Fire-Dex's manufacturing is Kevlar, made by Dupont, which is a strong, cut-resistant, durable material. They needed not only a highly efficient marker-making solution to reduce waste, but also a cutting system that could reliably cut through tough fibers.

Given the variability of their orders, their cutting system would also need to be very flexible. "We do a lot of customized gear to satisfy different municipalities or departments," said Jim Cabot, Cutting Department Manager. "Custom means short low-ply runs. But we also get big orders that mean we can run up to 25-ply."

Advanced technological solutions for excellence in quality with increased speed and productivity

Satisfied with the results they had been obtaining from their Vector automated cutting system, Fire-Dex recently decided to add Lectra's DiaminoFashion Expert.

DiaminoFashion Expert is the most advanced marker-making module of the Diamino® range, offering fast and easy interactive nesting as well as fully automated nesting. Based on advanced algorithms, DiaminoFashion Expert tightly packs markers while respecting garment and fabric constraints, even for specialized fabrics. Its user-friendly interface and autonomy result in maximum productivity.

Perfectly integrating markers created with DiaminoFashion Expert, the VectorFashion, Lectra's intelligent cutting system, achieves maximum productivity and material savings. Versatile and precise, VectorFashion

provides a powerful response to manufacturers' needs and represents more than 20 years of intelligent cutting room expertise for apparel manufacturing.

When making the choice, Fire-Dex aimed to create markers with the highest levels of efficiency possible in order to save material, reduce waste, and increase profits. With DiaminoFashion Expert, they now achieve marker efficiency of between 89 and 92%, every time.

"DiaminoFashion Expert has definitely added volume to our productivity," Cabot said. "DiaminoFashion Expert runs about 50 to 100 markers automatically and independently for us every night, and we're still getting the efficiency we need."

"A second advantage of DiaminoFashion Expert is in the cutting room," he said. "Now we have a much better supply of ready-to-cut orders, which means better organization of the cutting schedule. The cutting operation is no longer waiting for the markers to arrive. Instead, there's a steady influx of new markers every day. And we can cut more of the same fabric at the same time, which means we're changing the roll less often."

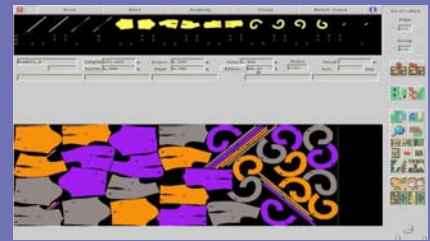
Working with DiaminoFashion Expert has not only helped Fire-Dex keep up with their significant growth in orders, but it has actually freed up labor hours, according to Karban. "We really needed those extra labor hours in other critical areas," he said.

"DiaminoFashion Expert has proven to be a very good investment for us," Karban said. "We're perfectly on track for a return on investment of 13 months—exactly what the Lectra experts had predicted."

DiaminoFashion Expert's user-friendly interface also meant that Fire-Dex's staff spent little time learning how to use the solution efficiently, according to Cabot. With Lectra's experts, training went "quickly and smoothly," Cabot said. "And in only two days, we were productive with DiaminoFashion Expert."

Lectra's Vector® cutting system has been meeting Fire-Dex's particular needs now for several years, especially

DiaminoFashion Expert



Optimized marker-making for guaranteed material savings and high productivity. Lectra's solution for interactive and automatic marker-making on plain and matched fabrics is a high-technology tool used by professionals worldwide. It offers state-of-the-art fabric optimization technology and functions for marker creation at a high level of productivity. DiaminoFashion combines fast and effective interactive marker-making for prototyping, costing and production and automatic marker-making that respects fabric and model constraints.

VectorFashion

VectorFashion is the most advanced answer to apparel companies' need for increased flexibility. It benefits from the intense R&D carried out by Lectra to provide customers with a simple, flexible solution.

in regards to the kind of versatility they required. "Our Vector cutting machines are very efficient and highly flexible," Cabot said. "From single-ply to 25-ply, we can count on our Vectors to cut through heavy-duty fire suit fabrics with reliable results."

With VectorFashion, Fire-Dex has the peace of mind of working with dependable equipment. They can also feel confident that they are maintaining the company's high quality standards.

"Lectra helps us maintain our level of quality. The technology keeps us up-to-date and in the most modernized plant possible," Cabot said. "With Lectra we're meeting our constant challenge—to continually improve."

"We definitely see our relationship with Lectra as a partnership," said Karban. "Every step of the way, they're helping us to meet quality standards ensuring we deliver the best and safest protective gear on the market."

©: Vector and Diamino are registered trademarks of Lectra.

ABOUT LECTRA

Lectra is the world leader in integrated technology solutions that automate, streamline, and accelerate product design, development, and manufacturing processes for industries using soft materials. Lectra develops the most advanced specialized software and cutting systems and provides associated services to a broad array of markets including fashion (apparel, accessories, footwear), automotive (car seats and interiors, airbags), furniture, as well as a wide variety of other market sectors, such as the aeronautical and marine industries, wind power, personal protective equipment. Lectra serves 23,000 customers in more than 100 countries with 1,500 employees. The company is listed on Euronext Paris.

