

3/08

Express

Magazine for Sheet Metal Processing in North America

Agent of change

Industry insight conveys success for Hytrol

Shareholders' value

Lockrey employees invest in their own work

Pioneer spirit soars

Stalking success with lasers

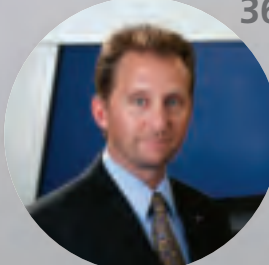
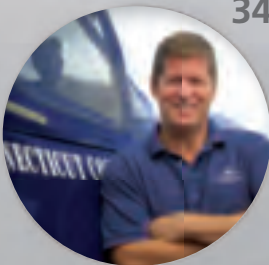
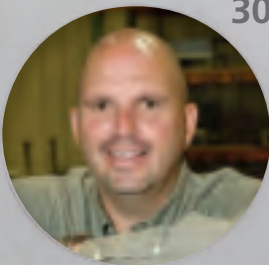
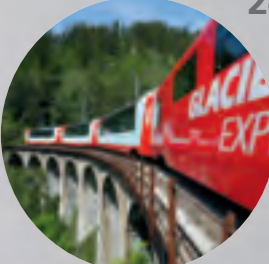
Viva Las Vegas

VSR Industries locks on and gives a leg up to Lady Luck

Special

TRUMPF at FABTECH:
The can't-miss performance!
Booth No. 7005 & 7015

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A part used in TRUMPF's mobile utility module system, which distributes power and water to the company's new Laser Innovation & Technical Excellence (LITE) Building. Made from 18-gauge steel on a TRUMPF laser.

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TRUMPF at FABTECH

Defining Efficiency *From page 19*

A teal-tinted image of Earth from space, showing swirling cloud patterns and landmasses. The text 'Commitment to Innovation' is overlaid in white, and 'Commitment to the Future' is overlaid in a lighter teal color below it.

Commitment to Innovation
Commitment to the Future



Rolf Biekert, President and CEO

Engineering Efficiency

The future is only a breath away. It's constantly unfolding, and, in business, if you choose not to develop efficient ways to meet it head on, the ones who will benefit the most are your competitors.

At TRUMPF, we realize that the key to gaining and sustaining maximum profitability in any business climate is to ensure that your organization has the capability and capacity to operate seamlessly. We are experts in designing and building machines and lasers that help you achieve this goal.

Through our unparalleled research and development efforts, TRUMPF offers what others cannot, which is the ability to smoothly adapt through the entire range of machine capabilities and technologies with the highest degree of efficiency. And it's not just newly-designed machines that define efficiency. Through R&D initiatives, we are continually adding features and capabilities to advance existing equipment.

One example is the TruFlow 7000, a 7 kW CO₂ laser that sets the industry standard for high power. Now available on the existing high-speed cutting machine TruLaser 5030, this increased efficiency offers higher cutting speeds in heavy gauge material, as well as reduced maintenance of the newly-designed and built-in diamond window output coupler.

Another case in point is the PierceLine technology developed by TRUMPF. PierceLine is efficient in that it not only monitors piercing

during the process of cutting, but it also regulates it in order to deliver just the right amount of laser power for only as long as necessary. This feature increases cutting productivity, reduces wear and tear on material and machine—and also results in energy savings.

While there are many factors that affect a manufacturer's profitability when operating any machine and determining the return on its investment, perhaps none is as important as efficiency. And while the primary focus for many is on the initial investment, the efficiency of the machine has a direct impact on the productivity or billable time. To determine the best value or highest return on your investment, criteria like resale value or cost of operation are also very important.

Whether it's efficiency in machine operation, changeover from job to job, reliable and consistent operation over time, or training and support, TRUMPF's goal is the same: Produce machines that deliver outstanding results with minimal interruption, which will allow our customers to operate on the highest level of efficiency in order to maximize their profitability.

The current business climate is taxing for almost everyone, but this is especially true for those companies that have not factored into their operational equation the importance of efficiency. True success requires more than simply adapting to current trends. It demands the kind of commitment to innovation found at TRUMPF.

Bobcat celebrates half a century of excellence

Contract awarded with U.S. Armed Forces

In celebration of half a century of excellence in compact equipment, Bobcat has launched the Bobcat 50 Years Unleashed North American Road Tour. This tour, which visited 23 dealers in the United States and Canada, included an overview of the company's history, equipment from the last 50 years and Bobcat collectibles and memorabilia. The Melroe Self-Propelled Loader, developed by the Melroe and Keller brothers in 1958, was honored as the start to a worldwide compact equipment industry.

As a birthday gift, the U.S. Armed Forces secured a contract with the Bobcat Government Sales Department in West Fargo for 85 Bobcat S330 skid-steer loaders and attachment packages for use in Afghanistan.

Press brake and laser technology from TRUMPF assist in the process of building compact equipment.



Bobcat fetes its 50 years with road tour.

> **Additional information:** www.bobcat.com

It's a home run in the award category for the Frymaster Protector® fryer

TRUMPF is a valued player on the Frymaster team



The Protector™ wins award for Frymaster.

The praise never ends for Frymaster, LLC's new high tech, low oil volume, award-winning Protector® fryer. The industry has heaped accolades on Frymaster's latest product introduction. Most recently, the gas Protector received the Gas Foodservice Equipment Network's (GFEN) Blue Flame award for foodservice product of the year. The electric Protector was a National Restaurant Association (NRA) winner of the prestigious 2008 Kitchen Innovations™ (KI) award and was showcased among the KI winners in the interactive KI demonstration area at the NRA show in May. In addition, the Protector earned the Electric Foodservice Council's 2007 Innovation of the Year award last November. For the seventh consecutive year, Frymaster, LLC earned "Best in Class" in the fryer category from Foodservice Equipment & Supplies magazine late last year.

The most environmentally-friendly fryer on the market, the Protector has leading oil-energy- and labor-saving features, helping it to shine in categories such as economic impact, innovation and technology improvements. Frymaster uses TRUMPF laser, punch and press brake technology in the production of these award-winning products.

> **Additional information:** www.frymaster.com

Miller-sponsored team earns recognition at AEM Construction Challenge

A predicted shortage of skilled workers sparks movement to introduce teens to construction industry

A shortage of skilled tradespeople, especially welders, has sparked Miller Electric Mfg. Co. to announce its sponsorship of the Association of Equipment Manufacturer's (AEM) Construction Challenge. It is estimated that by 2010, the American workforce could be facing a shortage of 210,000 skilled welders. The challenge is intended to promote skilled trades as a feasible option for high school students. On January 12th, 140 different teams from around the country competed at five regional rallies with the hope of being one of the top 60 teams to compete in the finals at the 2008 CONEXPO-CON/AGG in Las Vegas. Miller sponsored the Highland Park High School Team (Highland Park, IL) which placed third in the Equipment & Careers portion of the event and 24th overall. Miller Electric Mfg. Co. manufactures brand arc welding equipment, and uses TRUMPF laser and bending technology.



Miller introduces students to skilled trades.

> **Additional information:** www.millerwelds.com

High winds tower over German village

Pauwels 2.7MVA transformer utilized in Fuhrländer Wind Turbine

Pauwels Trafo Belgium has delivered a 2.7MVA SLIM® for the highest wind turbine in the world. Towering more than 525 feet over the German village of Laasow, the Fuhrländer Wind Turbine stands 673 feet tall from base to blade tip. It is even taller than Berlin's Alexanderplatz TV tower. Inside the tower's nacelle is the 2.7MVA Pauwels SLIM transformer, painted white to match the colors of the turbine. The turbine's estimated output of about 7 million kWh is enough to supply 1,800 four-person households. The hub height enables it to reach steady and regular winds.

Pauwels SLIM transformers have now been installed in the highest as well as in the biggest wind turbines in the world. Pauwels uses TRUMPF's TruBend 3120 in the production of its products to continue to reach new heights.

> **Additional information:** www.pauwels.com



Pauwels propels to great heights.

Exemplary career

Berthold Leibinger receives German Founder's Prize



It was for his lifework — “his impressive career from apprentice to company owner” — that Professor Berthold Leibinger, Chairman of the Board at the TRUMPF Group, was recognized with the awarding of the German Founder's Prize in 2008. According to the jury, he transformed the tradition-rich mechanical engineering firm into a high-tech leader on the world market and thus changed an entire industry. Also worth mentioning is his extraordinary involvement in social matters.

The German Founder's Prize has been presented annually since 1997 for exemplary achievements in the development of innovative and sustainable business ideas and in the establishment and expansion of new firms.

Professor Berthold Leibinger receives the Founder's Prize, presented by Florian Langenscheidt.

CST Industries announces purchase of Conservatek Industries

Company hopes to strengthen performance in worldwide markets

Congratulations to CST Industries, Inc. for the recent acquisition of Conservatek Industries, Inc. CST Industries is an international leader in the design, manufacture and sale of factory coated metal storage tanks and silos. Conservatek Industries is a leading manufacturer and installer of custom design aluminum covers for different industries and applications worldwide.

Tony Thill, VP of Business Development for CST, stated, “Its [Conservatek] design and engineering expertise, experienced management team and manufacturing capabilities are a strong fit with CST's existing businesses.” CST's company portfolio already contains Columbian TecTank, Engineered Storage Products, and CST Vulcan, many of which utilize TRUMPF machines in the manufacture of their products.



CST acquires Conservatek Industries, Inc.

> **Additional information:** www.cstindustries.com

Delfield chosen as outstanding supplier

Delfield's push to "go green" reaps rewards

The Delfield Company was presented the Outstanding Supplier for Refrigeration Award by the Supply and Equipment Foodservice Alliance (SEFA) at their 22nd Annual Partnership Conference in April. Delfield manufactures and markets foodservice equipment for restaurants, hotels, and institutions and specializes in customization in refrigeration. The award was selected by SEFA members, Delfield's very own customers.

All of Delfield's products have recently converted to environmentally responsible insulation that have an Ozone Depletion Potential and a Global Warming Potential rating of zero. Unlike common blowing agents used in competitive products, Delfield's polyurethane foam has no negative environmental impact in either area. Delfield's customers have adopted a desire to make their operations as "green" as possible, and this change has made that possible for them.

Delfield relies on TRUMPF's accurate and dependable laser technology to continue to lead the market in such innovations.

> **Additional information:** www.delfield.com



Customers say Delfield is tops.

Tyco Electronics reaches out to fellow co-workers

Millions of dollars of support sent to disaster relief funds in the Sichuan Province of China

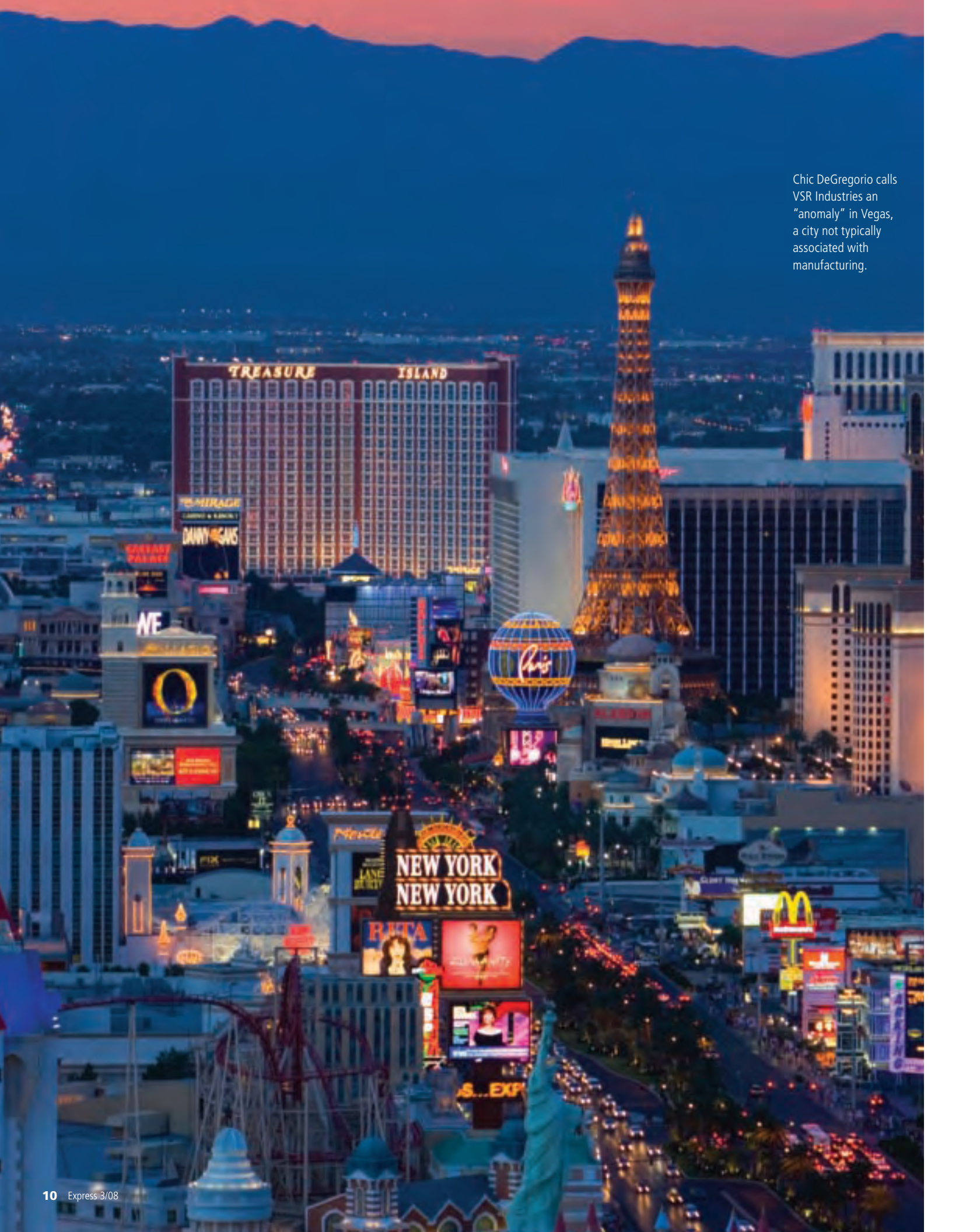


A Tyco executive in China following the Sichuan earthquake.

In response to the devastating earthquake this past May in China, Tyco Electronics donated \$1 million worth of emergency mobile communications equipment and radios to support recovery efforts. The equipment provided, including portable and mobile radios, base stations and network control equipment, is well-equipped to provide assistance to disaster relief teams and is already compatible with existing government systems in the Sichuan Province. Tyco Electronics has also donated \$150,000 to the Red Cross Society of China, in addition to the company's commitment to \$90,000 worth of products and services to assist in the reconstruction of the company's vital telecommunications and energy networks.

In addition to Tyco Electronics' corporate support, the company's employees worldwide have donated nearly \$270,000 to the Red Cross/Charity Federation and raised more than \$42,000 through an internal fund called the Tyco Electronics China Earthquake Relief Fund to directly support affected co-workers in China.

Tyco Electronics is a global provider of engineered electronic components, network solutions, undersea telecommunication systems and wireless systems, and has been using TRUMPF equipment since 1976.



Chic DeGregorio calls VSR Industries an “anomaly” in Vegas, a city not typically associated with manufacturing.

One-armed bandit gets a leg up

“It’s not the norm, that’s for sure,” says Chic DeGregorio of VSR’s role as supplier to the Casino industry.

In Great Britain, it’s known as the fruit machine. The Australians call it a poker machine. In the United States, it goes by slots. But a more colorful expression used to describe the most popular game on the casino floor is “one-armed bandit,” which refers to the lever—or arm—on the side of the machine that, when pulled, can quickly empty a person’s pocket of money. In fact, even in today’s high-tech age, where gamers merely press a button or touch a screen, many slot machines still sport a “legacy lever.”

However, it’s what’s holding up that arm and the rest of the machine, the contraption’s “legs,” if you will, which distinguishes VSR Industries of Henderson, Nevada.

“All of VSR’s manufacturing is geared toward the casino industry,” explains Chic DeGregorio, who, along with his partner Colton Vollmann, runs the company’s day-to-day operations. “We are an industry leader in both of our lines of manufacturing, on the lock assembly side, and on the sheet metal side where slot bases are the core item.”

“Our products are in almost every casino,” says Chic. On the sheet metal side of its business, VSR’s core item is bases that support slot machines and keep them standing upright. On the lock side, VSR manufactures and installs the majority of all cam locks found on slot machines.

“It’s not the norm, that’s for sure,” says Chic of VSR’s role as a supplier to the casino industry. “People on the outside see glitz and glamour,” but as he describes it, the reality involves more

work than social whirlwind. “Our customers, the casinos, run demanding, 24-hours-a-day, seven days-a-week operations.” And depending on the jurisdiction, VSR, in its role as vendor, has to meet the same types of strict licensing requirements as its customer, the casino. “The process to obtain proper licensure is very in-depth and very expensive.”

American success story

VSR Industries started out as VSR Lock when current majority owner Leo Wright, a locksmith by trade, set up business in 1969. “He evolved the company into what it is today,” says Chic, referring to the company’s eight locations, which include five in the U.S. and facilities in South Africa, Mexico and China.

Leo Wright is “one of the true American success stories,” explains Chic. “He is somebody who started from basically nothing and just built up the business, and he continued to build it up.” Such achievement “sure didn’t come overnight,” and Chic credits the company’s growth and longevity to Leo’s foresight. “He knew we had to make our own parts to play in a different league.”

And the league in which VSR Industries now plays is very impressive. The Las Vegas Division, technically located in Henderson, Nevada, is the headquarters of the privately-held company that employs about 165 people worldwide.

“We’ve been in this building for about a year now,” says Chic of the 75,000 square foot headquarters. Before that, VSR was situated >



VSR Industries, which launched in 1969, has become a quintessential American success story.

in a 35,000 square foot building, which the business outgrew in just three years' time. "You can never have enough floor space," according to Chic, who notes that 50,000 square feet of the new building is devoted to manufacturing space.

Going global

Chic and Colt both worked for VSR for several years before becoming minority partners. While the basic division of duties involves Colt overseeing manufacturing, domestic sales divisions and the financial operation, with Chic overseeing international sales divisions, marketing

and manufacturing, there is no clear cut dividing line. "Titles are not a big deal here," Chic explains.

One of the more memorable aspects of Chic's career, and a milestone for VSR, involves the opening of a division in South Africa. A conversation between VSR and casino officials in that country took place during a trade show in April of 1996. Three months later, Chic found himself living in South Africa, where he remained for four years. "The casino operators told us that an opportunity for business would only happen if VSR had a local office," he recounts. "They wanted us to have a physical presence in the country so that they could easily meet with us."



To the uninitiated, the base of a slot machine is fairly nondescript; however, there are at least 100 different designs.



VSR's manufacturing is geared toward the casino industry; the company's parts are in products on almost every casino floor.

"Clients have a better understanding after they witness the manufacturing process."

South Africa has a booming gaming industry with Johannesburg being the hub. Of 35 South African cities, Johannesburg has the most gaming facilities—including four casinos.

Today, VSR Industries employs five people in South Africa. "Leo and I go back a couple of times a year," says Chic, who credits VSR's success in that country to the company's willingness to adapt to the "elements you have to deal with. When you get outside of the U.S., it's an entirely different way of doing business. And I think that's true for anyone who does business internationally."

Basic tasks and functions that American businesses take for granted, such as renting and renovating facilities and connecting telephone lines, are very difficult to implement in South Africa. "But you get used to the challenges," he notes, and "you understand early on that you need to adapt in order to be successful."

Challenging, unique, glam

In spite of VSR's success, on the threshold of the company's 40th anniversary Chic and his partners are not content to sit back. "At this stage, it's likely that you have a pretty strong business base," he says, "but you can never be satisfied. The company is only as good as the next product that goes out the door."

And what goes out the door at VSR is mostly custom driven, which presents a unique challenge for a manufacturer. "A slot base is a slot base to most people," says Chic. "But there are at least 100 different designs." Customers require certain dimensions, designs and colors, for example. "There's no shortcut you can take because you're trying to make the same type of product. There's no easy way to do it," which is why, he says, VSR uses TRUMPF's TruPunch equipment. "It helps the company work efficiently to meet our customers' custom needs." >



On the sheet metal side of its business, the core product for VSR Industries is slot machine bases.

Chic calls the TRUMATIC 2020 R (TruPunch 2020), of which VSR has two on the sheet metal side, “pretty slick machines,” noting that with the TRUMPF equipment VSR has progressed from hand-feeding sheet metal into the machines to automating the process. On the lock assembly side, VSR uses TRUMPF laser-marking equipment.

“Our operation is up against a very challenging timeframe,” says Chic. “We get an order, lock that order up, design it, obtain design approval, manufacture it, and meet the commitment date.”

While acknowledging that the gaming industry, like many other industries these days, has slowed down from the volume of business it was once doing, Chic remains optimistic. “On the flip side, every state is looking for tax revenue and the gaming industry provides a source for that.”

As for VSR’s presence in Las Vegas, it’s an anomaly. “First of all, there’s the environment in Las Vegas,” Chic explains. “There’s very little manufacturing in this town. So it’s an eye-opener when you can visit our showroom and see how a product is made start to finish. Clients have a better understanding after they witness the manufacturing process.”

Given the circles in which it travels, big construction projects with gala openings are all a regular part of business for VSR Industries. But Chic is nonchalant about it all. “We enjoy the excitement, but we’re manufacturers. We don’t seek the limelight.”

And the question begs to be asked: How is Chic at playing the slots? “I’m numb to that,” he says. “We deal with it day in, day out. I just don’t have any desire to play.” □

Success story

Who: VSR Industries, Las Vegas, NV, with eight locations in four countries. Established in 1969. www.vsrindustries.com

What: Manufactures parts used in products for the casino industry.

How: Two TRUMATIC 2020 R (TruPunch 2020), TRUMATIC L 2510 (TruLaser 2030), TrumaBend V 1300 (TruBend 5130), TruBend 3120 and VectorMark VMc1 (TruMark VMc1)



Big Bertha and the sound of rain

If you’ve never given much thought to a slot, here’s some fodder to get you going:

- The first slot machine was invented around 1898 by Charles Fey of San Francisco, California, a German immigrant. He named his machine “The Liberty Bell.”
- While some of the very early incarnations of a slot machine’s payout came in the form of fruit-flavored chewing gum, hence the fruit images found on the reel symbol, today’s payout is in cold hard cash. The amount a machine pays out is based on laws set by the gaming commission of the jurisdiction in which the machine is located. Slot machines in Las Vegas are required by law to pay out 75% of the money that goes into them.
- Slot machines have gone high-tech and are equipped with a micro-computer. They’re pre-programmed to pay off at certain times and under certain conditions.
- A little research turned up that a long-standing record of \$65,093 was won in one slot pull on a \$1 progressive in 1973 at a slot machine in Reno, NV.
- When it comes to casino slang, there is special “speak” for slot machines. “Big Bertha” is the term for large slot machines that casinos strategically place on the floor in order to attract players. The “sound of rain” refers to the sound of coins dropping when the slot machine cashes out. So here’s hoping the next time you’re in Vegas and Big Bertha beckons, you’ll be hearing the sound of rain. (Or, if Lady Luck is smiling upon you, maybe there will be a big thunderstorm.)



Don Vollmar, president and CEO of Lockrey Manufacturing.

Ohio manufacturer's high expectations

Despite a depressed local economy, Lockrey Manufacturing is doing well – flourishing – in fact.

You can find Lockrey's shareholders on the shop floor, and in the offices, quality assurance center, engineering and customer service departments, as well as the reception area. That's because all of Lockrey's 72 employees are also owners.

Lockrey traces its roots to 1956 when it was founded as Lockrey Screw Products. In the early 1990s, Lockrey outgrew its original >



Lockrey fabricates components for the petrochemical and other industries using state-of-the-art technology from TRUMPF.

mission and became Lockrey Manufacturing, expanding into a facility with 100,000 square feet for machining and fabricating. In 2000, Lockrey became employee-owned. Today the company achieves about \$12 million in sales and is 51% owned by its associates. In 2010, employees will have the opportunity to own 100% of Lockrey.

“Our shareholders are here every day,” explains Don Vollmar, president and CEO of Lockrey Manufacturing. “It’s amazing what you get back when you raise your level of expectations. Too many managers settle. We empower people, set expectations high, and our people perform wonderfully. That’s why Lockrey is profitable.”

Quality relationships

High expectations and solid relationships, Vollmar insists, are essential elements in Lockrey’s success. “Everything is relationship based,” he says. In fact, it was Vollmar’s relationship with Mark Makulinski – who purchased Lockrey in 1977 with a vision of

growth to a “manufacturing mall” – that brought him to the company. Vollmar was working for Fab Steel, one of Lockrey’s customers. “They were machining components for us,” Vollmar says of Makulinski. “He’s a hard worker and a great person. We hit it off right away.”

An engineer by trade, Makulinski approached Vollmar to develop Lockrey’s fabrication department in 1993. In turn, Vollmar called upon a relationship he had formed with TRUMPF in 1979. Vollmar knew TRUMPF machinery would provide the quality and repeatability Lockrey sought. “The idea was to apply Lockrey’s quality machining methods to precision fabrication,” says Vollmar.

Meeting growing needs

The company invested in a punching machine, and a few years later purchased a second. Punching machines helped Lockrey to expand its customer base and as it expanded, the company encountered different needs – one of which was to cut heavier material. “We bought

the first laser to cut 3/8-inch material for a customer making dollies for trucks,” Vollmar explains. “That allowed us to get into a thicker material market.”

Today the manufacturer is ISO 9001 certified and fabrication accounts for 40% of the business. Its biggest customer is in the petrochemical industry, but Lockrey also makes components for industrial floor cleaning equipment, enclosures for the car wash industry, suspension system components for performance trucks, and handles some military work, among other industries. Lockrey also manufactures products through c2M, a company that leverages its production expertise to help bring its partners’ product ideas to the market.

Initiatives benefit everyone

With its punching and laser cutting machines producing high-quality blanks, Lockrey’s old press brake no longer kept up with the tolerances, quality and speed required, so the company purchased a TRUMPF press brake. The press brake’s repeatability was particularly

important to Fabrication Manager Dirk Ward, who also says the machine condensed steps and reduced setup – key factors in company initiatives to cut lead time.

Another contributor to Lockrey's lead time reduction and automation strategies: a TruLaser 2030 purchased in autumn 2007. As a result of the high-speed laser cutting machine's automated load and unload features, Lockrey increased its productivity without adding personnel. "I think it's a disservice to ask our people to work harder for less money," Vollmar says. "When you add technology and get more done with the same people, everyone benefits."

Fast and efficient

Faster cutting speeds, particularly in thin material, offered an advantage to Lockrey – which cuts a lot of ¼-inch-thick material – and its partners. "Our customers get a quality product faster, which gives them more control over inventory and pricing," adds Ward.

Ward also notes increased efficiency and decreased consumption of gas, power and other consumables. He explains that nitrogen usage is down, not simply because the machine uses less gas, but as a result of technology that allows the machine to quickly cut using compressed air as an assist gas while producing an edge that's easily powder coated. "Now we can reduce nitrogen use and don't have to mechanically clean each part before powder coating," he adds.

Vollmar is quick to point out the people alongside their state-of-the-art technology. "The people who operate it are what differentiate us. We rely on our people more than the average company and get exceptional results."

Sharing profits, equity and purpose

Lockrey's symbiotic relationship with associates may be due in part to its profit-sharing programs and equity-creating employee stock ownership plan (ESOP). "Since everybody here is an employee-owner, we have a very motivated workforce," says Vollmar. "Our folks want to reinvest and keep the company strong because that equity generates their wealth."

Employee ownership can affect company performance and profitability, but simply having employee-owners doesn't produce results. Like Lockrey, the most effective ESOPs share the company's profits and equity, but also create a positive, energizing culture in which employees want to make a personal >



Employee-owned Lockrey Manufacturing sets standards high.



He was asked to develop Lockrey's fabrication department in 1993, and today Don Vollmar leads the company as president and CEO.

"We empower people, set expectations high, and our people perform wonderfully."

investment, have access to business information, understand and share expectations, and feel engaged and equipped to do their jobs well. No small undertaking, but one which Lockrey has achieved.

Spreading information and expectations

To foster deeper employee understanding of the business, Lockrey created a 20-course, 80-hour Associate Awareness Program covering subjects such as accounting, blueprint reading, part measuring, and fabrication and machining processes. Vollmar says, "We don't teach everyone to be machinists, but we make them aware of how their jobs affect others." Associates also have access to the company's financial information.

High expectations are shared among Lockrey associates. Twice a year they conduct an evaluation of each other that determines individual percentages of the peer evaluation bonus. "It's a demanding environment," says Ward. "Everybody here is expected to be a hard worker. If the person working next to you thinks you could do more, he/she will be very open and honest about their expectations. With our programs associates can increase their annual income by 50 or 60% when Lockrey does well."

"If people aren't genuine about their job and contributing to the team, they don't work here very long," adds Vollmar. Lockrey's culture isn't for everyone. The initial turnover rate is high, but the average associate has worked for Lockrey 10 to 15 years. "We strive to have a place where any working person can make a difference," Vollmar says.

Getting and giving back

The company philosophy of giving back is evident in its community involvement. "We think it's important to contribute to the community where we make our money," says Vollmar. "The more we give, the more all of us receive."

Lockrey supports community service organizations with money, as well as volunteers. Associates allocate 5% of their annual bonus pool to charity. "That's not corporate wealth being donated. That's their money,"

Vollmar emphasizes, but whenever an associate takes part in after-hours volunteer work and provides a record of their time, Lockrey matches the contribution to the charity at a rate of \$4 per hour.

"We encourage staff participation in two community service projects annually," says Vollmar. "They are team-building experiences for us." One of this year's projects benefited the Toledo Gospel Mission, a local organization feeding the poor. A second project, the American Cancer Society Relay for Life, was particularly poignant for associates. In 2005, the company lost a machinist to cancer and two cancer survivors are presently employed at Lockrey.

Free market future

The company enjoys its non-traditional approach to business. In this fashion, Vollmar is energized when asked about the future of the company and the effect of the Asian market on manufacturing.

"Everybody talks about Asia and losing jobs, but a lot of work that went overseas came back – contract manufacturing is going great right now," Vollmar explains. "India, China and Russia added 2.4 billion people to the free market economy. That's a lot of consumers: 40% of the world's population. It's a great time to be in business, but survival isn't assured. You have to continually work at it." And have high expectations. □

High expectations

Who: Lockrey Manufacturing, Toledo, OH.
www.lockreymanufacturing.com

What: Manufactures parts used in the petrochemical industry, and in many other diverse industries

How: TRUMATIC 160 R, TRUMATIC 200 R, TrumaBend V50 (TruBend 5050), TruLaser 2030, TruLaser 3030

Defining efficiency →

Power Tools

Since 1934, TRUMPF's portable power tools have been used in a wide variety of industries and machining shops. The electric, pneumatic and cordless power tools are used in various material processes, including cutting, fastening and bevelling.

TruMark 6020 with TruMark Station 7000

TRUMPF's 1064nm laser marking system, the TruMark 6020 is designed for premium processing of metal, plastics and ceramics. High marking speeds in engraving, ablation and annealing are consistent. Housed in the TruMark Station 7000 it is an exceptionally versatile laser marking workstation that achieves maximum productivity.

TruLaser 5030

A 2D laser cutting machine for the processing of sheet metal up to 1.18 inches thick. The single cutting head strategy enables all material thicknesses to be processed using the same cutting head. The integrated collision protection safely guards the cutting head and folds away in a collision.

TruBend 5130

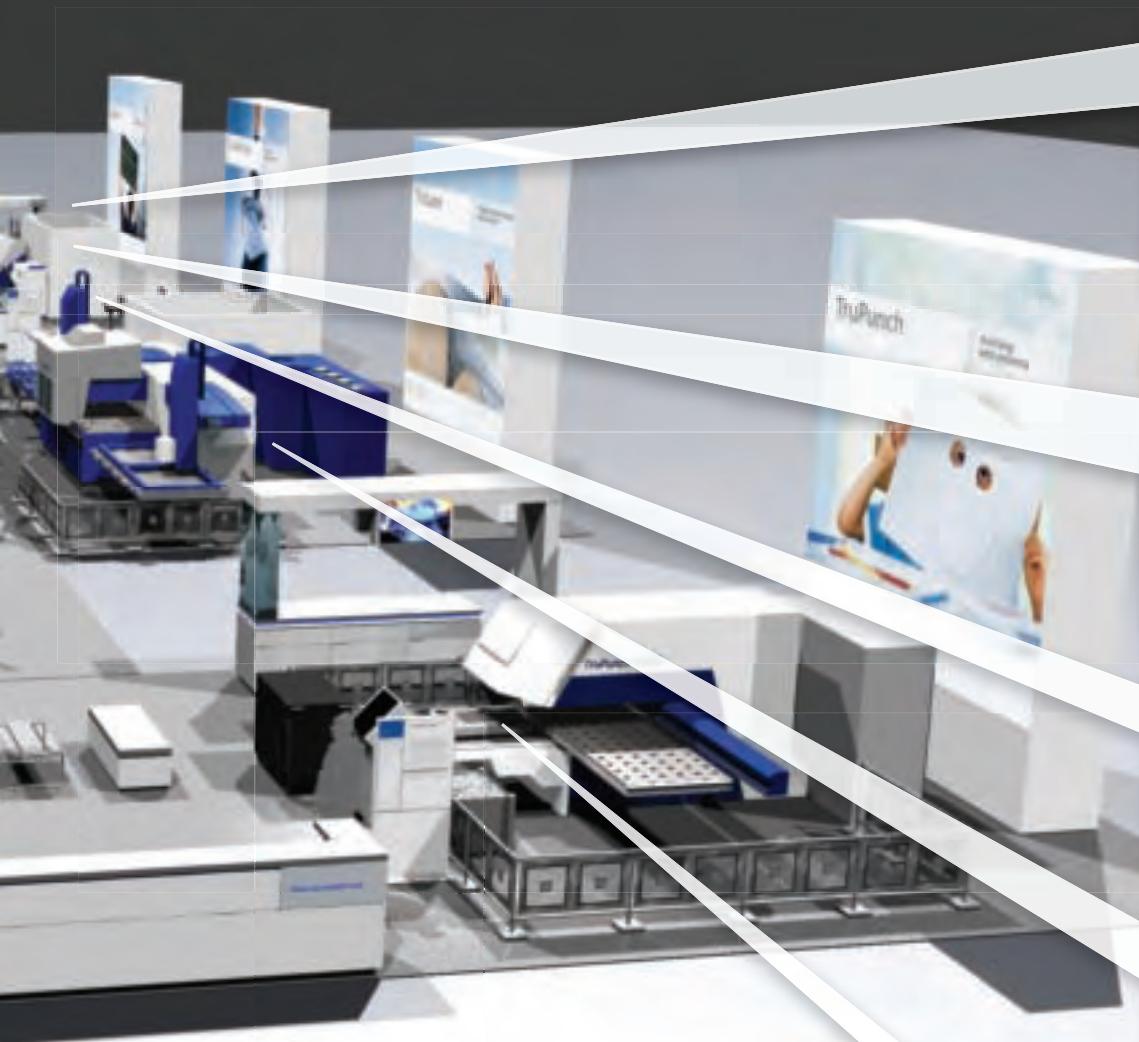
TRUMPF's TruBend 5130 press brake is equipped with a crowning system that uses hydraulic cylinders combined with a passive crowning technique. It also features a 6-axis backgauge, CNC crowning, I-Axis shift, BendGuard safety system, optical set-up and positioning aid and mobile control. Programming can be performed offline with TruTops Bend, at the machine control in 2D, or manually.

Webster's defines "efficiency" as "effective operation as measured by a comparison of production with cost (as in energy, time and money)". The key to productivity and profitability, efficiency is a crucial design element in TRUMPF fabricating equipment

and industrial lasers and is a common thread throughout our product portfolio.

The features and design elements created by TRUMPF engineers that make our machines and, in turn, fabricators more productive will be on display at FABTECH 2008. With more

FABTECH's new rotating location schedule brought the show out of the Midwest and to the Southeast (Atlanta) in 2006. This year FABTECH makes its debut on the West Coast at the Las Vegas Convention Center giving fabricators in that region a platform to see the latest in fabricating technology first hand.



TruLaser Station 5004

The TruLaser Station 5004 with integrated solid-state TruPulse 103 laser and electronic stereomicroscope, is a first in laser processing. Its concept is based on a new, compact and ergonomic machine concept. The microscope's two cameras offer a complete, three-dimensional exposure of the work piece, which enables welds to be achieved with great precision.

TruDisk

TruDisk lasers are a brilliant combination of solid-state and diode lasers. Their superior beam quality and closed loop power control ensure the highest process reliability. TruDisk lasers have a field serviceable design and an excellent wall plug efficiency of up to 27%. High speed welding and cutting with enhanced precision and large scale scanner welding are ideal applications for TruDisk lasers.

TruServices

World class services ensure the full potential of your TRUMPF machine is utilized. Customized services are economical and enhance the life of your TRUMPF machine.

TruLaser 2030

The new TruCoax 3200 watt coaxial, diffusion cooled resonator adds speed and capacity to the TruLaser 2030. Increased speed and productivity combined with an integrated load and unload system make the TruLaser 2030 a compact sheet metal cutting center. It is available with working areas of 48 x 96 in., 48 x 120 in. and 60 x 120 in. and features a moving safety enclosure 75% smaller than conventional enclosures.

TruPunch 1000

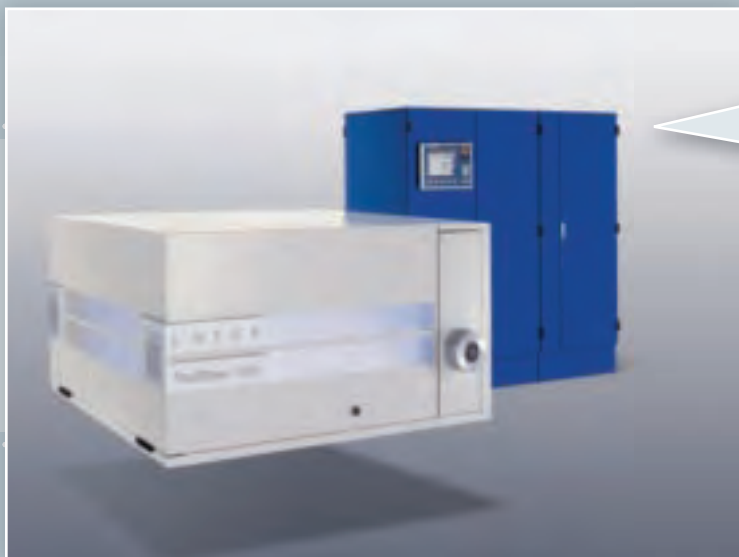
The TruPunch 1000 is an ideal entry level punching machine or addition to an existing line. The machine is easy to operate with a touch screen programming system and PC based control. It features TRUMPF's signature tool rotation as well as wheel technology. Capabilities include high quality punching, notching, tapping, contouring, forming and part deburring.

than 10,000 square feet of booth space at the entrance of the Las Vegas Convention Center's South Hall, visitors to the TRUMPF booth will experience the latest in laser cutting, punching, bending and industrial laser technology. In addition to live product demonstrations,

attendees can visit our technology consulting stations, manned by technical experts, to take a closer look at key machine features that make TRUMPF machines the most productive on the market.

FABTECH Premieres

Productivity is in the design



TruFlow 7000

TRUMPF will introduce a new 7 kilowatt laser at FABTECH. The most recent addition to the TruFlow series of laser resonators, the TruFlow 7000 joins with the TruLaser 5030 NEW to keep fabricators on the cutting edge of innovation and productivity. The increased laser power results in faster cutting speeds that boost quality and efficiency.

Cutting speed increases of up to 10 percent can be achieved in stainless steel ranging from 0.312 inches to 0.625 inches thick. In stainless steel 0.75 inches to 1 inch thick, fabricators can experience cutting speeds as much as 30% faster than with its predecessor, the 6 kilowatt TruFlow 6000. Additionally, increased cutting speeds of up to 10 percent may be realized in the processing of some aluminum applications.

The TruFlow 7000 also expands the range of sheet metal thicknesses that the machine can cut, specifically in stainless steel and aluminum.

Technical Data

| | |
|-----------------------|-------------|
| Guaranteed max. power | 7,000 watts |
| Max. sheet thickness | |
| Mild steel | 1 inch |
| Stainless steel | 1.18 inches |
| Aluminum | 0.8 inches |

TSC 2 Slat Cleaner

TRUMPF's new TSC 2 slat cleaner, the successor to the popular TSC 1 slat cleaner, quickly and easily removes slag from the slats of laser cutting machines and can be used on flatbed laser machines with pallet changers from any manufacturer.

Three differences in the new machine can be recognized immediately: the new capacity plate, brush set and vent holes. The steel brush set replaces the stripper plate used on the TSC 1 resulting in longer tool life.

The quiet TSC 2 slat cleaner can be used on support slats from 0.08 inches to 0.15 inches thick. With its automatic forward feed, it quickly and easily cleans slag up to 0.6 inches thick off steel, stainless steel and copper support slats. Slats do not have to be removed for cleaning, and cleaning can take place while production is running. The ability to clean a standard sized pallet approximately 5-by-10 feet in as little as 20 minutes, results in significant savings for fabricators.

Technical Data

| | |
|----------------------------|-------------------------|
| Support slat thickness | 0.8 – 0.15 in. |
| Max. slag thickness | 0.6 – 1 in. |
| Min. spacing between slats | 1.3 in. |
| Working speed | 26 – 32 feet per minute |
| Rated input power | 1400 watts |
| Weight | 28.5 lbs. |



Going the distance

Easy programming, compact and capable of performing multiple functions, TRUMPF's TruPunch 1000 is more than up to your task.

So you think a punching machine is just about punching? TRUMPF has a counterpunch to that kind of thinking. Forget pitty-pat punches. With TruPunch technology, capabilities such as forming, bending, marking and tapping are all “non-punch” functions that can be performed on a punch machine.

And if you assume that a machine with such sophisticated capabilities requires a corner man—or at the very least an advanced degree in engineering to operate it—then you haven't met TRUMPF's TruPunch 1000. Less complex parts can be programmed quickly on the machine, even when the programmer has very little prior experience.

One of the most sought-after qualities of the TruPunch 1000 is the simplicity of its programming, which is intuitive for the programmer. The machine's PC based control allows the programmer to quickly develop programs using the easy programming function, even while the machine is in use.

This is a key feature for many job shops where the programmer is also the operator. Using the touch screen panel, the programmer can first start to create the flat blank part by selecting from a few simple options. Since punched parts are generally rectangular in shape the programmer is prompted to input an overall length, width and thickness of the desired part. This is followed by the corner processing. The software will prompt you to input corner notches, radii or a combination of both. They can even be left square. These geometries are not limited to the corners either, they can be generated anywhere along the outside perimeter



The TruPunch 1000

of the part. Once this information is entered, the software then guides the programmer to input any internal geometry. Round holes, squares, rectangles, and oblongs are quickly generated by simply clicking an icon. Hole patterns and arrays can be placed anywhere on a part using various coordinate locations making prints received with dimensions from all surface areas a breeze.

Once the desired flat blank part is completed a three dimensional solid model is created for the programmer to view. If the results are satisfactory, the part can be easily nested on any sheet size. The number of parts nested on the sheet can be anywhere from one to as many as it takes to fill the sheet - or

anything in between. The parts are simply arranged on the sheet and tooling can be added either by using the machine's tooling library, or when you need a part quickly, use the tooling already established on the machine tool rail to fabricate the parts. The tooling paths are automatically optimized, and the program is ready to run.

Fast, easy and simple are just a few ways to describe the programming software available on the TruPunch 1000. And that's not pulling any punches. □

> **Additional information:**
Mike Morissette, 860-255-6036
Email: mike.morissette@us.trumpf.com



The train cannot weigh more than a total of 135 tons, the maximum this century-old viaduct can bear.

Storming the heights

Rolling stock by Stadler Rail is a world traveler. Whether in Austin, Texas, in Nyugati pu Budapest or with the Glacier Express in Zermatt: Stadler comes and goes at stations all around the globe.

The town of Bussnang in the Swiss canton of Thurgau is home to a company with more employees than the town's population. Some 2,200 people work for Stadler Rail, a company specializing in rolling stock and serving customers all around the world. Its headquarters — the Stadler Bussnang AG with its 1,100 employees — remains in the picturesque Swiss village that is so rightfully proud of its fantastic ratio of 1.6 jobs per resident. The town has expressed its gratitude to its prime employer by adding a suffix to the town's name: "Bussnang — The town with the train".

The Stadler Rail Group with its six manufacturing sites — Bussnang, Altenrhein, Winterthur, Berlin, Siedlce (Poland) and Budapest — is active above all in the market segments made up of regional and inter-urban trains, light rail and street cars. What's more, the company intends to hold its premier position in the world's cog railway market. Peter Spuhler, CEO at the holding company, explains how. "In contrast to the major companies, we do not follow a platform-based strategy. Rather, with modular concepts, we offer rail operators customized solutions, tailored to their needs."

Alpine panoramas

That also convinced the operators of Switzerland's Glacier Express, which refers to itself as "the world's slowest express train". It links St. Moritz with Zermatt — via Chur, Disentis, Andermatt, Brig and Visp. This narrow-gauge train takes a good 7½ hours for the 180 mile route. 291 bridges, 91 tunnels and the Oberalp Pass at an altitude of 6,670 feet make its course a true adventure. There are postcard views at virtually every curve — particularly for passengers in the panorama car. During the most recent upgrade,

Three letters stand for a tidy seam

Structures incorporating elaborate but, solid welds are indispensable for the quality of Stadler's rolling stock. The basis here is a clean surface at the welding edge, one free of any oxides. Until just a few years ago this was achieved with electric planing machines, but construction manager Bernhard Eisenegger was not particularly happy with that solution. As a result of the toughness of aluminum, these tools were forever becoming clogged and in need of cleaning. When searching for alternatives some three years ago he discovered TRUMPF's TKA series of hand-held electric deburrers. The advantages of these power tools quickly convinced him and his associates. Eisenegger notes: "The TKAs can be used to machine a wide variety of contours. Even the smallest inside radii pose no problems. Burrs can be easily removed and the bevels have a clean visible edge. What's more, the TKAs are easy to use — even in overhead work such as milling down both sides of the edges, 65 feet long, on the car roofs."



in 2006, these cars were supplied by the Stadler works in Altenrhein.

Now the cooperating, privately owned railroads — the Rhätische Railway and the Matterhorn-Gotthard Railway — are working to boost attractiveness once more. To further secure the position of the Glacier Express as a premium-segment product, the operators are banking on additional panorama cars and service carriages — built by Stadler. Beginning in the summer of 2009 four trains with identical features will traverse routes between St. Moritz and Zermatt or Davos and Zermatt. Those two railways are investing a total of about 20 million Swiss francs in new rolling stock. The most outstanding features include a pneumatic suspension system for an improved ride, audio entertainment through headphones at the individual seats, and windows reaching right into the curve of the roof. The cars are also fully air conditioned. All of this was achieved by using lightweight construction principles. This was necessary because historical structures such as the viaduct, 213 feet high and built in the year 1901, set limits on load. The train, comprising six cars, without the locomotive, may not weigh

more than 135 tons. Easy-to-service designs that can be achieved in lightweight engineering are among the distinguishing features of the Stadler line. They are in demand by customers because they contribute to keeping operating and maintenance costs low. The company has specialized in rail technology ever since its founding in 1942 and has amassed vast expertise in this and many other fields, as well. That makes it possible for engineers to respond to individual requirements. These carriage builders also enjoy another advantage: even today everything from truck and bogie engineering to final assembly of the cars is all under one roof.

On the rails around the world

The list of references for Stadler Rail reads something like a who's who in the world of rail transport. That includes the German Railways, the Swiss National Railways and operators in the USA, Greece, Hungary, Italy and Algeria. The company's designs and concepts have found favor around the world. For example, the first diesel-powered articulated cars have been operating since the end of 2007 in Austin, the capital of Texas. Stadler has delivered a total of six trains

to the Capital Metro rail company for use in regional transit. Stadler Rail CEO Peter Spuhler is quite satisfied: "We're proud that our trains are now in service in Texas. This is our second export order to the United States." □

Rolling stock

- Who:** Stadler Rail Group, headquarters in Bussnang, Switzerland. About 2,200 employees, sales approx. \$1.06 billion. www.stadlerrail.com
- What:** Regional and inter-urban trains, trams, cog railways, diesel-electric locomotives
- How:** TKA 300 and TKA 500 deburrers, Test operations for the new TKA 300-Li with rechargeable batteries

Conveying a sense of community



Gregg Goodner, president of Hytrol.

When he was asked about Hytrol's people, Gregg Goodner's response was emphatic: "Many of them never leave."

Employee loyalty is a strong suit of Hytrol Conveyors in Jonesboro, Arkansas. So much so that Gregg Goodner, Hytrol's president, makes an extra effort to commemorate an employee's 40th anniversary with the company.

"Employees who have 40 years or greater service with us, we take a piece of stainless steel and etch out a bust of them on the laser," says Gregg. The busts are laser carved using photos of the employees, and when completed they go on pillars in the company offices, "a symbol that employees are our pillars of strength," he says. There are five busts in place, with two more on the way this year.

"I get the next plaque off your [TRUMPF] machine," says Sam Wright. "I started out as a mechanical draftsman, the old drafting boards." That was 1968. Today, Sam works in design quality with engineers on field issues, in sales and some customer support, too. "I'm a jack-of-all-trades."

"I started here in the 60s and they were growing and there have always been a lot of opportunities here. I like a challenge and this business is a challenge every day. It's like building a car from scratch and you get to see the final result."

Sam is one of many examples of how Hytrol, a leading manufacturer of conveyors, sortation and accumulation systems, builds its strength through long-term employee relationships.

"I feel like I've been with the company for 40 years, but I'm 45," says Boyce Bonham. "My dad went to work for (Hytrol) when I was five. When I graduated from high school, Hytrol was giving away two scholarships and I was selected as one of the recipients." It helped Boyce earn



Thirty to 40 percent of the conveyors from Hytrol are built to individual customer specifications.

“Ours is probably the most recommended, specified and purchased package handling system in North America.”

an engineering degree and opened the way to a rewarding career, which he didn't necessarily think would be at Hytrol.

Boyce was planning to work at Hytrol for the short term because he didn't think conveyors would be interesting from an engineering standpoint. But then it started to change. Conveyors were “becoming smarter,” he says. Faster, too, from 60-70 feet per minute up to today's 600-700 feet per minute. Boyce was hooked. “The conveyor world was starting to become a lot more interesting from an engineer's aspect. So one thing led to another and here I am.” More than 23 years later.

Changing the ways conveyors convey

Since its founding in 1947, Hytrol has been a leader in innovative conveyor systems. Hytrol introduced electronic accumulation in 1997 and according to Gregg “it changed the industry dramatically.”

Electronic accumulation introduces logic to the often complex accumulation of various size cartons on a common conveyor. Hytrol led the way in making the control of this process as easy as working from a laptop PC. The system, called EZ Logic, is now the de facto industry

standard. So much so that, when customers spec-out an electronic accumulator system, they automatically ask for EZ Logic “just as they would Coke or Kleenex,” says Gregg.

Hytrol has to be innovative because 30-40% of their systems are custom-built. Again, here's where people make the difference. “We have an engineering staff of 45-55 who design, develop and build a product.” So no matter what customers demand, Hytrol has the experience to meet it. Their customer list reads like a who's who of famous companies – GM, Ford, Sony, Barnes and Noble, O'Reilly Auto Parts, K & N Filters, Sub Zero, Anheuser Busch, and scores more.

Most of Hytrol's applications are in warehouse distribution and manufacturing. “Ours is probably the most recommended, specified and purchased package handling system in North America,” says Gregg. But he has an appetite for more. “Food, beverage and pharmaceuticals are areas we'll be looking at. There's going to be a big push to ensure that food doesn't get contaminated and more of this manufacturing will be done in the U.S.” To meet the stringent cleanliness requirements of food makers, Hytrol offers ultra smooth finish stainless steel systems. >



Hytrol is one of the world's largest manufacturers of conveyors and conveying hardware.



Engineer Sam Wright began his career with Hytrol in the 1960s.

As an answer to the skyrocketing price of stainless, Hytrol also builds powder coated mild steel systems that meet sanitary standards at lower cost.

Another Hytrol innovation is a 24-volt powered conveyor with a pancake motor that mounts to the side of the conveyor. "This design is quieter and actually cheaper than the powered roller," says Gregg. The ordinary powered roller has a motor inside the roller and is prone to build up heat and wear faster with a life of about 2,000 hours. With the new drive, service life leaps 10 times to 20,000 hours. The drive system, called E-24, integrates with EZ logic to offer precise control. "It's easy to install, build and maintain," says Gregg.

Engineers + customers = new ideas

"Innovative products and innovative design are the lifeblood of the business," says Gregg. "We're trying to stay ahead of the game based on input we get from end users."

And how does engineering factor in? Let's just say the engineers aren't cloistered behind a desk. They're often out in the field with customers, face to face. "It's worked out well for us," says Boyce, "because engineering is my background and I can share what our products do for customers. It helps us come up with new ideas. It's a good way to get customer feedback." Yet Sam observes that it's sometimes difficult for engineers to work with customers. "There are two different philosophies there. It can be very humbling or very rewarding. I've been kind of lucky because I can branch both sides of it."

Perfecting the process

Hytrol is well along in adopting the latest innovations in manufacturing processes. "We're in the fourth year of lean manufacturing," says Gregg. They've also realigned their four core businesses into focused factories,

three by product and the other is support. "We're more productive than we've ever been, have the highest backlog we've ever had, we've got the best quality in the industry and on-time delivery is 98%-plus."

At the heart of Hytrol's advanced efficiency and productivity are two TRUMPF lasers. "The development of the laser is going to help us tremendously," says Gregg. "We can burn it on the laser, take it over to the press brake and it's ready to assemble. Before, we'd have to go through a cleaning and de-burring; it was a lot more handling. Most everything is cut on the laser, including holes. It's now a two-step process. This makes a difference because of the high price of stainless. "We're cutting everything with the laser, except for high-volume pieces of channel more than 10 feet long."

Boyce and Sam are enthusiastic about where lasers have taken them as engineers. "We just touched the surface of what we can do from an engineering aspect. Engineers can think more out of the box," says Boyce.

Sam, who is due for retirement at the end of this year, has seen the Hytrol plant go from drill presses to press brakes to lasers. All this change, he says, "keeps you on your toes. I've been very fortunate." □

Conveying innovation

Who: Hytrol Conveyors, Jonesboro, AR, employs more than 725 people in a 500,000 square foot manufacturing center. www.hytrol.com.

What: One of the world's largest manufacturers of conveyors and conveyor hardware.

How: TRUMATIC L 3030 (TruLaser 3030), TruBend 3120, TruLaser 3030, TruLaser 5030

In today's global economy, businesses can't afford to miss out on international opportunities. Think about it: more than 70 percent of the world's purchasing power is outside of the U.S. If you're not exporting, it's highly likely that your competitors are or will be selling internationally. For many of our clients, free trade agreements, ease of transportation, and the Internet have really helped to simplify the export process.

One of the most important things about exporting is that it enables firms to diversify their portfolios and help weather changes in the domestic and world economies. So, by spreading the risk, it helps them boost their competitiveness and bottom line.

Contrary to what many people think, it's not just the big companies that export. By far, the vast majority of exporters are small and medium-sized businesses (with fewer than 500 employees), yet we know that only a very small share of businesses export. For example, nearly 60 percent of all exporters only sell to one foreign market, so many of these firms could boost exports by expanding the number of countries they sell to.

Ensuring success

The most important keys to export success are that companies must have a long-term perspective and top management commitment. Exporting can be rewarding, but challenging, and companies need to be in it for the "long haul." A track record of successful selling in our domestic market is very helpful. Companies should also assess their internal resources for doing business abroad.

Avoiding the pitfalls

To take advantage of the opportunities that exporting presents it is imperative that you do your homework first. It happens all too often smaller companies will assign the international sales or shipping to one or two people, yet the sale impacts the entire company. For example, the accounting department may not understand how the company could be more competitive if they only gained an understanding of finance options for export sales. Additionally, sales people can be limited on what they offer a foreign buyer because they may not understand international terms of sale, or Incoterms, or what the seller and buyer responsibilities really are once they've agreed to a sale.

Other areas that cause confusion or expose the company to risk may include not knowing the buyer, agreeing to an exclusive distributorship for an entire region, or not knowing enough about U.S. export laws. The Commercial Service works frequently with companies on these issues. Many times, it's a simple matter of internal and external communication and a learning process for the entire company.

Opportunities for manufacturers

Currently, there are excellent export opportunities for those in the manufacturing sector. U.S. manufactured goods are in high demand and have an excellent reputation around the world, and our firms are particularly strong in after-the-sale service. Last year, U.S. exports of goods and services grew by 13 percent, reaching \$1.6 trillion. Manufactured exports were \$981 billion, or 84 percent of total goods exports. Top markets for U.S. exports in 2007 were Canada, Mexico, China, Japan, United Kingdom, Germany, South Korea, Netherlands, France, and Taiwan. Free trade agreements (FTAs), have been extremely helpful in boosting exports.

Support and advice

With a network of 107 offices across the U.S. and locations in American embassies and consulates in nearly 80 countries, the Commercial Service helps U.S. companies sell their products and services worldwide. For more information, visit www.export.gov or call 1-800-USA-TRADE. We also have a manufacturing team (www.buyusa.gov/manufacturing.com) that provides customized export solutions for manufacturers. For more information, email Debbie Dirr at Debbie.Dirr@mail.gov □



Why should U.S. manufacturers consider exporting, if they aren't already?

"Exporting enables firms to diversify and weather changes in the domestic and world economies."

Debbie Dirr is an international trade specialist with the Commercial Service in Cincinnati and Dayton, Ohio.



Sean Abbas, president of Iowa Laser, believes the company's ability to maintain focus is key to its success.

Amazing growth

Agriculture isn't the only thing that's thriving in this state. Iowa Laser has exceeded its founders' original expectations.

Maintaining focus

People are naturally skeptical of new technologies. But when one engineer saw a laser demo at a conference, he saw potential. In fact, he became convinced that it would be the future of manufacturing. So with a big vision, entrepreneurial spirit and a disregard for the status quo, that engineer and two others started Iowa Laser Technology Inc.

Founded in 1978, this trio of pioneers began with a focus on laser processing at a time when others concentrated on metal fabrication. They purchased the first laser from an automotive supplier's lab, performed some integration and used it for cutting and heat treating. "The resonator—which weighed 18,000 or 19,000 pounds—when operating perfectly had a 1200-watt beam," remembers Sean Abbas, President of Iowa Laser, who joined the company in the late 1980s.

"There were only 12 of us, and with that small of a business, you do a little of everything," he says. From his role as a laser technician, Sean quickly moved into sales. "I spent a lot of time on the road with cases of parts, visiting engineering groups and spending most of my time educating industry because the capabilities of lasers were not well known." He recalls that "there were a lot of surprised and confused people. I was told that the laser was a passing fancy, too expensive to replace stamping or plasma cutting."

Growing in the industry

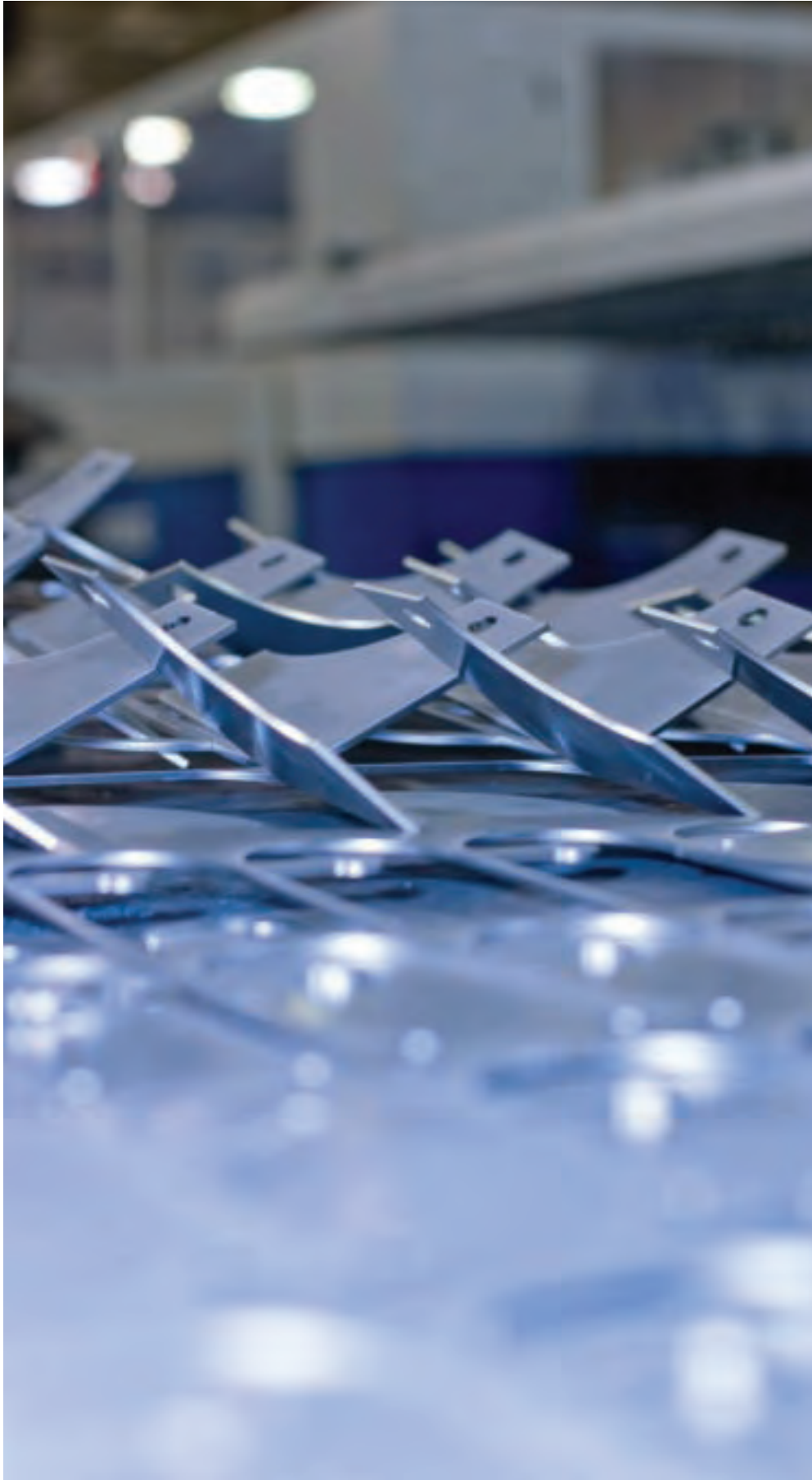
Sean respected the entrepreneurial spirit of the men who started the company, noting that throughout history those who blaze the trail are the people who are also greatly rewarded. But he also believes that

the ability to maintain a focus is the key to Iowa Laser's success.

As laser processing received widespread acceptance in the industry, the company began to grow into a multi-disciplinary manufacturing facility. And in 1999, around the time Sean became its president, Iowa Laser experienced a period of transition. "We reached a crossroad; we had to decide if we should continue to design and build our own equipment or change focus and allow our engineers to spend more time exploring projects with the customers." They approached the decision with caution, because, "If you don't stay focused, you can really lose your compass as you evolve," Sean advises.

As Iowa Laser set off to determine its direction for the future, Sean and his team met with six major manufacturers of laser equipment, with the initial goal of finding a resonator. "We had 20 years of laser processing experience before we came to TRUMPF, so we brought in the worst possible laser parts – parts with holes smaller than the material thickness and other complex requirements just to see what was possible. Fortunately, Iowa Laser found that it and TRUMPF spoke a common language. "TRUMPF realized we weren't inexperienced and they didn't treat us as such," says Sean. "They related with us on a level we appreciated and it became pretty apparent that this was the way we needed to go." In the end, they decided to purchase two laser cutting machines and let the engineers concentrate on the customer.

And it was the right decision. When Sean joined the company in the late 1980s, Iowa Laser operated in the \$900,000 range. Today, they register over \$30 million in business, employ 163 people, and the >



Iowa Laser has evolved from two TRUMPF laser systems to more than 13.

two TRUMPF laser systems are now more than 13. In spite of such success, Sean's philosophy remains basic: Iowa Laser maintains focus and stays responsible. "Above all, the customer wants you to be reliable. They depend on us and we depend on them."

Building symbiotic strength

Realizing the importance of relationships, Iowa Laser solicits feedback from customers on a regular basis. The company's president explains that it helps Iowa Laser maintain a focus on their requirements regarding lead times, competence, processing and expectations. Then, they compare it to the company's own goals, which include helping their customers become more successful. "We don't want to do anything that doesn't provide value," says Sean. "Providing services not required by our customers does not really impact Iowa Laser, but it does negatively impact our customers' ability to be competitive."

For this reason, Iowa Laser implemented its Shop Tolerance Program. "Cost is added when tolerances are not considered" explains Sean. Before Iowa Laser actually produces a part, they ask questions. "We interact with a customer's engineering department and try to find elements that make it less expensive for us to manufacture. We estimate hundreds of thousands in annual savings for our customers just from asking questions," Sean explains, and in situations where cost cannot be reduced, the customer at least recognizes what drives the cost in manufacturing the part. This kind of insight has earned Iowa Laser customers in more than 43 states and eight countries.

Because Iowa Laser produces product components, Sean Abbas says that his employees enjoy seeing the finished product.



“We don’t want to do anything that doesn’t provide value.”

Sean’s engineering insight even extends to his personal interests. For example, when he talks about a favorite hobby—collecting old fishing lures—which he has done since childhood, he’s intrigued. “I recently found an old Jamison’s Whistling Bobber, brand new, just like I had when fishing with my grandfather. I get a kick out of how they were manufactured, realizing how much easier and less expensively it can be done now.”

Parts of a whole

“The uniqueness of the laser creates variability on a daily basis. We make parts for major industries such as aerospace, construction and mining, but we also do jewelry, cemetery signs, fitness equipment, ATV’s, and even cowboy spurs,” says Sean. Because Iowa Laser’s employees usually produce only components, he realizes how much they enjoy seeing the finished product. “They understand, from a tolerance perspective, why parts need to be precise, but they really take pride in how they look when they are driving along and see the parts on a multimillion dollar mining machine.”

From a business perspective, Sean appreciates the growth Iowa Laser has experienced the past two decades. “When we were moving into our recently expanded facility, we found the original business plan and what

the founders hoped to accomplish. It’s pretty safe to say we’ve greatly exceeded what even they thought was possible.”

However, Sean finds it far more rewarding to see the growth on a more personal level. “It’s nice to earn money and expand, but seeing what people can accomplish personally and professionally is the best part for me. To watch an employee grow and accept new responsibilities, that’s what I love, seeing what people can achieve.” And it seems as if most of the employees share a desire to grow with Iowa Laser. “Nine of the 12 of us that were here when I started are still working here, evidence we don’t have much turnover.” □

Rooted in reliability

Who: Iowa Laser Technology, Inc., Cedar Falls, Iowa, one of the first laser processing facilities in the United States. www.iowalaser.com

What: Automated sheet/plate laser cutting, laser tube cutting, laser welding and laser heat treating, CNC forming, conventional and robotic welding, CNC machining, and complete manufacturing engineering services.

How: Two TruLaser 5030, Two TruBend 5085, Two TruLaser 2030, Six TruLaser 3030, and a TruLaser 4030



Flying high in Connecticut

Unique project hopes to return Corsair
to flying condition

Connecticut Corsair, headed by Craig McBurney, has dedicated themselves to the restoration of the F4U-4 Corsair, Connecticut's State Aircraft. Between owning an aerospace consulting business and volunteering full time on the Corsair, Craig is quite busy, but he shared a little of his free time with us to tell us about the restoration project and what TRUMPF is doing to help.

Can you tell us a little bit about the history of the Corsair?

The F4U Corsair was designed and built right here in the state of Connecticut. In fact, it is the only aircraft of its type to be manufactured by one corporation, in one state. It was the first US military single engine aircraft to fly faster than 400 miles per hour, and was flown extensively during WWII. The Connecticut-built Corsair became a legend overnight for its versatility and durability. Our aircraft was built in Stratford, CT in 1945, and was sold as scrap metal by the US Navy in 1957.

What sparked your interest in the Corsair?

Growing up here in Connecticut, I was aware of the Corsair's history, and would fly with my father, a part time flight instructor, to see the original Corsair factory and a flyable Corsair that was briefly based at that airport. In addition, a television show titled "Baa Baa Black Sheep", loosely based on the exploits of a WWII fighter squadron flying the Corsair, was popular at the time. I joined the US Air Force right after high school, and have been making my career in aviation ever since.

What are your goals for this project?

Our main goal is to restore the Corsair to flying condition in its birthplace and thus dubbed the project "Connecticut Corsair." This makes our project the only one of its kind in the country. It is important for us to reproduce and re-build the components of the Corsair here in Connecticut while promoting as many Connecticut-based businesses as possible. We worked with Governor Rell and the state legislature to designate the Corsair "Connecticut's Official State Aircraft" in 2005. We are developing scholarships and educational programs using the Corsair as the "attention getter" for the students, especially at-risk youth. We are helping our sponsors recruit employees through these programs, as well.

Can you tell us a little about what the restoration process involves?

We are using state of the art technology to repair original parts and to fabricate new ones. The traditional methods used were to merely copy an original part, by hand. Instead, we are applying advanced software programs such as SolidWorks, Rapidform and MasterCam. By referencing original drawings and microfilm, we can create the computer files which are used to fabricate the new parts. If the drawings do not exist, we create the computer files using white light scanning.

What has been the hardest step in the restoration so far?

We have received generous support from our sponsors in the form of goods, services and other technical support, but I would have to say raising the funds to pay for what cannot be donated has been the most difficult aspect of the project.

When do you find time to work on the Corsair? Is it a hobby or do you work on it full-time?

I work on the Corsair full time, as a volunteer, side by side with all of the part time volunteers. I also own an aerospace consulting business, providing archival research, marketing and promotional services full-time to aerospace manufacturers and aerospace defense contractors.

Can you tell us a little about your family and other interests?

My family lives here in Connecticut, and that is the best part about my moving back here from Florida because I get to see them more often. I garden a little, I am an avid recycler, and grow exotic hot peppers from all over the world, (and eat them too)! I keep a number of bird feeders in my yard, and attract many varieties of birds year round. Someday, I want to learn how to brew German style beer at home.

How is TRUMPF helping with your project?

TRUMPF has been invaluable in aiding this project. We have received a tremendous amount of technical advice from TRUMPF. We supply the digital files, and TRUMPF laser cuts the sheet metal for us. TRUMPF is also helping us network with their customers, locating companies here in Connecticut with the capabilities to assist in the Corsair restoration. □



California dreamin'

Al Bohlen, operations manager of TRUMPF's West Coast Technology Center, discusses the spirit of the west and how TRUMPF meets the unique needs of the marketplace.

Al Bohlen is operations manager of TRUMPF's West Coast Technology Center.

How long has TRUMPF had a presence on the West Coast?

TRUMPF opened the West Coast Technology Center in 1998 as a support for TRUMPF's West Coast customers. We believe that it is important to be closer, geographically, to this important segment of the North American market, but also closer to our customers' needs. It is a real community of TRUMPF divisions, not just machine tools. The TruMark group, the laser division and the electronics division that produces the RF generators—which make our laser cutting machines run—all of these resources can be presented to a customer on the West Coast. By establishing a presence in California we are able to demonstrate our technology in this region of the country and be more attentive to the particular requirements of the market.

The West Coast location is very technically oriented. You don't get a diluted version of TRUMPF; our objective is to provide the same level of experience, talent and capabilities as in the customer would receive in Farmington, Connecticut. We really do try to emulate the whole essence of TRUMPF.

Is there a typical West Coast application?

One good example involves the automotive aftermarket industry. Tools and parts, not just mainstream, but some of the more unusual trends such as lift products, were launched on the West Coast and many are created using TRUMPF equipment. I would venture to guess that 80 percent of any lift kit on a truck going down the road is made on a TRUMPF machine.

But that's certainly just the beginning. There are many end-use applications for parts produced by West Coast fabricators. And customers in this region of the country can come to our facility and see in person the resources and equipment available from TRUMPF.

How does the West Coast market differ from the rest of the North American market?

Entrepreneurs come to this part of the country because they have an idea for a product they want to launch, and they need to set up a



The West Coast Technology Center provides customers in that region of the country the opportunity to see, firsthand, TRUMPF's fabricating capabilities.



TRUMPF's Dan Meader, an applications engineer, is based at the West Coast Technology Center.

facility where they can manufacture it. California, as a state, is known for innovation. It's the iPhone and all of these types of technological products that come from California, as well as automotive trends, aerospace and other industry trends.

Is there a typical West Coast customer?

California and the western territory is a region where people are always on the move. It's a diverse community. People from all over the world seem to find themselves in California. They know it's the best place to launch that product that's kicking around in their head. California really is the Golden State. If you've got some new idea that you want to introduce to the North American market, you bring it here.

What types of machines or features seem to be the best suited for this market?

What we've learned about the west coast fabricators is that many of the users' facilities are very tight on space. Real estate here is expensive, so you find many of the fabricators are in tight spaces, which means they're looking for high-tech products but they need them delivered in a compact footprint. They want advanced technology, but if they can't fit it in their shop they're not going to buy it. The TruPunch 1000 and the TruLaser 2030 are popular products on the West Coast. They each offer a compact footprint, but there is no sacrifice in performance.

What types of machines do you have under power at the Technology Center, and are you able to do custom demonstrations on site?

In our demo room we have a TruPunch 1000, the TruLaser 2030, TruBend 5085, and a TruBend 3066. Customers come to the technology center and present us with parts that they would like to see manufactured on our machines, they supply the necessary CAD files—and we show them how they can do it more efficiently with TRUMPF.

How long have you been working at the West Coast Technology Center?

I have been the West Coast Operations Manager for eight years, but this October I will celebrate my 20th year with TRUMPF. I started out in the service department, worked as a service engineer for many years and have really been involved in just about every aspect of the business. Customers can call me about anything, from a question over an invoice to a question about how to find parts for their power tools.

What do you like best about your job?

What's really exciting is when we introduce manufacturers to TRUMPF innovation for the first time. They're so excited to have someone walk in the door with not just another me too product. On the West Coast, we're in a territory where the manufacturers are really embracing the new and innovative—and that's exciting. □

Revere's mettle

It's that midnight gallop for which he's most famous, but America's favorite patriot also put the pedal to metal



The first copper rolling mill in North America was founded by famous American patriot Paul Revere.

Courtesy of the Canton Historical Society, Canton Massachusetts

When you think of Paul Revere, you probably conjure up an image of a horse galloping through the dark night with its rider crying, “The British are coming!” But have you ever wondered what became of the patriotic messenger after that famous midnight ride on April 18, 1775?

Concerned that the United States would be stuck importing sheet copper from England after the war, in 1801, Revere, at age 65, opened the very first copper rolling mill in North America. Copper, incidentally, was the first metal mined and crafted by man.

Born January 1, 1735, Paul Revere grew up learning the art of gold and silversmithing. Early on he opened up his own silver shop, and his work as a smithy was his primary occupation for more than 40 years. To supplement his income, Revere was also a copperplate engraver, a dentist, and a manufacturer of surgical equipment and artificial teeth.

It was not until after his famous ride, however, that the patriot became interested in the copper industry. For 12 years following the Revolutionary War, Revere carefully studied the art of copper sheet metal rolling. Finally, in 1801, he moved to Canton, Massachusetts where he risked his entire life's fortune to launch the very first copper rolling mill in America. Revere selected the land next to the Neponset River as his new home because the strength of the river's flow helped to generate energy.

Revere's business, originally called The Revere Copper Company, flourished due to extensive orders from the U.S. Government in addition to many private purchases.

By 1803, Revere Copper had been used to line the hull of the U.S.S. Constitution, to build the roof at New York City Hall, and to sheath the dome of the Massachusetts Statehouse. Revere Copper was also used by Robert Fulton in his famous Fulton Steamships, as well as in more than 700 brass cannons that saw action in the War of 1812 and the Civil War.

At the age of 76, Paul Revere retired and left his business to his sons and grandsons. After his death in 1818, The Revere Copper Company was run by his son Joseph Warren Revere. In 1938, James M. Kennedy of the Rome manufacturing plant invented “Revere Ware,” and by 1951, the company's 150th anniversary, it was the oldest and largest independent copper fabricator in America. Today, Revere Copper Products is headquartered in Rome, NY. They do not, however, still own or create Revere Ware. Instead they make a broad assortment of copper and copper alloy mill materials.

Many advances in the sheet metal industry have been made throughout the years, and it's no stretch to attribute some of them to Paul Revere—the man who opened the country's first copper rolling mill. In fact, many landmarks in our nation today still proudly display this loyalist's carefully-crafted work. □

CREDITS

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TRUMPF Inc.
Farmington, CT 06032
www.us.trumpf.com

Responsible for the content

Sheila LaMothe

Editor-in-Chief

Melanie McMillan
860-255-6112
melanie.mcmillan@us.trumpf.com

Editorial Staff

Mike Gordon
Susan Grohs
Sheila LaMothe
Allie Leblanc
Karen Miller

Design and production

John Mik, MIK Advertising & Design

Printing and assembly

Paladin Commercial Printers, LLC

Contributors

Catherine Flynn
Robert Devol
pr + co. gmbh, Stuttgart

Photographs

Steve Adams Photography
Bobcat
Bob Harris Productions
CST Industries
Delfield Company
Frederic Neema Photography
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Oak Ridge Photography
Pauwels Trafo
Rycus Associates Photography
StudioJ
TRUMPF Archive
Tyco Electronics

Illustrations

Historical Society of Canton, Mass.
Wayne Camarro



THE FUTURE OF SPACE TRANSPORTATION

THE SPACEWARD GAMES '08

Vertical Distance: 1 km

Speed: 2 m/s, 5 m/s

Total Prize Purse: \$4 Million
(Provided by NASA's Centennial Challenges Program.)

Best Performance to Date:
1.8 m/s over 100 meters

Number of Registered Teams: 11

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In the Games' Power Beaming challenge, competing teams use Space Elevator prototypes featuring climbers to scale a 1-km tether using beamed power transferred from the ground. Among the available beam power sources is a TruDisk 8002, 8kW laser donated by event sponsor, TRUMPF. Scores will be determined according to a calculation of the climber's speed, payload carried and weight.

The games are scheduled for fall 2008 and you or your company can be a part of them. For more information, please visit www.spaceward.org.

THE FUTURE IS CLOSER THAN IT APPEARS.

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