

Vol. 1/14

Express

Magazine for Sheet Metal Processing
in North America

Prepared

Webco Manufacturing is built with fundamentals on the mind

Talented

TMM Precision fabricates with an artistic hand

Poised

A focus on quality has opened new doors for DIMET

Special
Laser Cutting



Revival

A fire forced Anderson's new owners to rebuild from the ground up.

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EMBRACING CHANGE

“Change is the law of life and those who look only to the past or present are certain to miss the future.” With these words, John F. Kennedy captured the essence of progress. A company must be mindful of one’s environment, including the technological developments and societal transformations that impact business. The world is constantly evolving. We must be prepared to react and adapt along with the changes, for herein lies an opportunity to develop ones’ business and surge ahead of the competition.

Our customers have told us that embracing change keeps them in business, while standing still causes a business to stagnate and fall behind. At TRUMPF we strive to advance our products, services and our business to remain competitive in this ever-changing environment. In doing so we provide customers with their own competitive advantage. In the early 1990s, we identified the potential of solid-state laser technology and invested resources to develop it for an industrial environment. We are now the only machine tool manufacturer to offer a complete 2D solid-state laser cutting solution from a single supplier. This expertise also enabled TRUMPF to develop progressive technology, such as BrightLine fiber, which takes advantage of the fully integrated system to provide customers with unmatched performance in laser cutting.

To be successful, a business must also develop as an organization. TRUMPF recently expanded its technology center in Monterrey, Mexico to provide new training classes and increased application support for our Mexican customers. We also look to adapt to the needs of the U.S. and Canada. Starting July 1, 2014, TRUMPF will be under new guidance in North America, as I will return to TRUMPF GmbH + Co. KG. Under the direction of the new president and CEO, TRUMPF Inc. will expand its footprint in the Midwest and its presence across North America. We have considered the needs of the market and are prepared to react.

In this issue of TRUMPF Express, we learn of anticipated transformation and of unexpected change experienced by our customers. The benefits of careful planning are shown through the story of Webco Manufacturing Inc., an employee-owned company which established a new company culture to coincide with its new facility. We also learn of unexpected change from the Anderson Group, a company forced to adapt and rebuild after a devastating fire. Keeping up with innovations throughout these changes have enabled companies like Webco and Anderson to stay ahead of the competition. Finding your competitive advantage, within a changing environment and despite the circumstances, will enable your business to evolve and grow. Change is inevitable, yet if you stand ready to adapt, progress will result.



Lars Gruenert

Dr. Lars Gruenert,
President and CEO

Masters of Sheet Metal

An online magazine for sheet metal processors



Every day, sheet metal workers across the world form and fabricate parts for use in virtually every industry on earth. Each approach is different yet each story inspires. TRUMPF has developed an online magazine especially for these “Masters of Sheet Metal”. At www.mastersofsheetmetal.com you will find stories about the doers and shakers in sheet metal machining –how they work, what motivates them, and what makes them successful. In addition to the stories, you will also find helpful hints on technologies and applications, newly introduced products and timely topics all focused on sheet metal. Read this and more on your PC, iPad or Smartphone.

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

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QUESTION



Lisa Anderson,
founder of LMA Consulting

> **What can manufacturers do to help close the skills gap?**

A survey conducted by LMA Consulting Group Inc., in conjunction with the APICS-Inland Empire chapter, found 87% of manufacturers and distributors surveyed are experiencing a skills gap. In my former career as a VP of Operations for a mid-market manufacturer, we frequently utilized on-the-job training as a seemingly low-cost, quick to implement solution; however, a smart combination of a pre-planned on-the-job training and development programs generates more effective results.

To determine which training and education options to use, take a step back and determine which types of skills and behaviors need to be developed for each employee. Some folks need technical concept training, and skills-

based classes can be a great value. However, they'd be useless for someone who knows what to do but who is unable to communicate it to his/her boss. In that case, a communications class might be in order or a mentor type process could be preferred.

Partner with potential training partners and build relationships with several training options including groups such as APICS, community colleges and extended education partners, higher education partners, self-study programs etc. and you will reap the benefits of your efforts

> **Additional information:** www.lma-consultinggroup.com

TRUMPF provides CEUs

IACET reaccreditation of TRUMPF courses

The International Association for Continuing Education and Training (IACET) has awarded reaccreditation status to TRUMPF Inc. Education programs provided by TRUMPF train more than two thousand customers each year in machine operation, maintenance, programming and other important technical skills that enable our customers to stay on the cutting edge. The renewed partnership with IACET demonstrates TRUMPF's commitment to lifelong learning and high standards for all of our programs.

IACET Authorized Providers are the only organizations approved to offer IACET Continuing Education Units (CEUs). The accreditation period extends for five years, and includes all programs offered or created during that time. To achieve Authorized Provider accreditation, TRUMPF completed a rigorous application process, including a review by an IACET site visitor and demonstrated adherence to the specific standards relative to the design, development, administration, and



evaluation of its programs. TRUMPF is now linked to the IACET web site and is recognized as offering the highest quality continuing education and training programs.

TRUMPF joins nearly 650 organizations worldwide that have had their programs vetted by third-party experts in continuing education to ensure the highest possible standards are met.

> **Additional information:** www.iacet.org

Chamfered edges are simple to create and aid in material handling.



Tooling Tip

Chamfered edges for easier handling

Using a TruMatic combination machine with a roller pinching tool to round off sharp edges will increase operator safety for handling materials after production. The tool places an angle, or chamfer, on both sides of the sheet metal. To do this, a groove with a root angle of 120° is first cut into the material. The laser beam, aimed at the bottom of the groove, then cuts through the sheet metal. The result is a perfectly chamfered, laser-cut edge. The entire process is achieved quickly, quietly, without any additional retouch work required, and without changing the laser cutting parameters.

> **Additional information:** www.us.trumpf.com





The Girl Scouts were given a glimpse of high-tech manufacturing at TRUMPF.

Scouting out future careers

Girl Scouts visit TRUMPF Inc.

Girl Scout troop 10400 of West Hartford, CT visited TRUMPF Inc. to see how STEM (science, technology, engineering and math) education applies in real life. The girls, ages 9-10, were given a laser cutting demonstration before Annette Doyle, Manager of Assembly, led them through the assembly of a TruLaser Series 1000 machine. The girls were challenged to note the differences between the TruLaser 1030 and TruLaser 1030 fiber and asked questions along the way.

The group also visited the training department where Dr. Myrna Reyes, R&D Applications Engineer, explained how the laser works, passed around sample parts, and operated the laser. Some of the scouts helped run the machine and each girl took home a laser cut Girl Scouts logo.

The visit ended with pizza and a Q&A session where the Girl Scouts asked about the machines, what it takes to become an engineer, what Annette and Myrna do on a typical day and what they like best about their jobs. The girls left with a positive perspective on manufacturing and the new and exciting career opportunities it can provide.

Raising wishes

Hillbilly Outfield supports Make-a-Wish Foundation®

Jim Hafendorfer, President of Hafendorfer Machine no longer watches the Kentucky Derby from the infield at Churchill Downs. This TRUMPF customer and his fiancé simply walk outside their home in Middletown, KY and join the hundreds of people who have arrived for the Hillbilly Outfield Derby Bash. What was once a party for Hafendorfer and his friends is now a weekend of philanthropy and fun in support of the Make-a-Wish Foundation®. “We have miniature golf, games, live music and other entertainment, a silent auction and good food,” explains Hafendorfer. “We host nearly 500 people now and some even camp in the backyard!”

Since 2001, the Hillbilly Coalition’s contributions to Make-A-Wish have touched the lives of 26 local children and families and raised more than \$135,000.00. For the

14th annual Derby Bash this May, the Hillbilly Coalition looks to add \$24,000 to its total which will grant the wishes of four more children who are fighting life-threatening medical conditions in Kentucky and Southern Indiana. Hafendorfer states it simply, “It’s just a great weekend for everyone to come together, celebrate the pageantry of the Derby and support a good cause.”



Jim Hafendorfer and his fiancé at the Hillbilly Outfield Derby Bash.



> **Additional information:** www.hillbillyoutfield.org

Cleaning with a laser

Joining Technologies uses a laser to prepare parts for welding

The laser is the ideal tool for cleaning metal parts prior to welding. Compared to conventional methods, laser cleaning is less time consuming and less toxic to the environment. The processing cost-per-part is minimal and the laser is able to remove oil, grease, or other contaminants without heating or otherwise influencing the material.

Joining Technologies in East Granby, CT uses a TruMicro Series 7000 provided by TRUMPF Inc. to clean aluminum and other metals for a wide range of applications. The full service fabrication facility serves as an applications lab, integrator or job shop, depending on the customer's capabilities and the level of the project. Dave Hudson, President and CEO of Joining Technologies says, "With the TruMicro laser and our staff of process development engineers we have been able to produce remarkable results, free of toxic or expensive chemicals. The process of cleaning parts has just been revolutionized."



Joining Technologies uses a TruMicro laser to clean customer parts.

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

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QUESTIONS



Alberto Pancardo,
TRUMPF Mexico's Managing Director

> What services does TRUMPF Mexico offer its customers?

In our Monterrey facility, visitors now see more TRUMPF technology in action. We have recently added new products to our technology center to better support the laser cutting, punching and bending needs of the Mexican market. The additional machines also enable TRUMPF to expand our training classes in Mexico. Now our customers can attend training or watch a demonstration on a wider variety of TRUMPF machines such as the TruLaser 1030. They also receive additional support in the way of spare parts, finance, service and sales -- all without leaving Mexico.

> In what other ways does TRUMPF Mexico contribute to the TRUMPF Group?

Around the world, TRUMPF technology is used to manufacture new TRUMPF machines for our customers. In Monterrey, we manufacture a range of parts for TruLaser and TruPunch machines. We are planning to expand our manufacturing operations in the future, supplying additional, high-quality parts throughout North America.

The Anderson Group prospers under the direction of Patrice Desrochers (L), Luc D'Amours, and Frédéric Lavoie





Sparked by a flame

Three young owners overcome devastation to exceed their goals.

At approximately 3:00 p.m. on September 19, 2012, a fire started in the walls of the Anderson Group, a manufacturer of innovative agricultural and forestry equipment in Chesterville, QC, Canada. The fire ran its course for three hours before an employee saw the flames and called operations manager and co-owner, Luc D'Amours, who had just left the factory. "We tried to extinguish the fire, but it had worked its way inside the wall for hours, slowly consuming the insulation," he remembers. "Once oxygen hit the flames the fire grew rapidly and within an hour, it was impossible to take control."

The company's essential information was on a server in Anderson's office, and D'Amours was determined to find it. "We had to break through the door because the locks had malfunctioned. The flames were very close and it was frightening!" The fire destroyed 75% of the factory and caused \$11 million in damage – \$5 million of that was in equipment. Only the welding operation, protected by a concrete wall, was saved from destruction.

Clearing through the wreckage

With the server intact, email, customer information and accounting data were accessible the following day and within two days, sales and administration were operational from a rented trailer. This is especially impressive considering at an average age of 31, Anderson's three young owners, D'Amours, President and CEO Patrice Desrochers, and R&D manager Frédéric Lavoie, had just finished buying the company a few months earlier.



Anderson was able to rebuild and move home just eight months after the fire.



“We knew the 6-axis capabilities of the new TruBend Series 5000 would be advantageous.”

To stop production was simply not an option. Anderson provides equipment to farmers in twenty-five countries worldwide and is now the largest manufacturer of inline wrappers in the world. Fortunately, the company had a new TruLaser 3030 laser cutting machine scheduled for delivery the week after the fire. “The morning after the facility burned,” D’Amours recalls, “I called TRUMPF to change the delivery address and placed an order for two TruBend Series 5000 press brakes.”

Anderson had lost a TRUMPF press brake in the fire and was familiar with its bending capabilities. “We typically bend 16 or 18 gauge material, up to 0.5 in. or 0.75 in. thick. The parts are not easy to bend because of the design. We knew the 6-axis capabilities of the new TruBend Series 5000 would be advantageous, and the additional flexibility to run bending programs on either machine was also a valuable attribute.”

With TRUMPF machines on the way, Anderson could also avoid subcontracting its laser cutting. This was important to D’Amours and Lavoie who worked together in Anderson’s R&D department for two years before joining with Desrochers to buy the company. D’Amours explains, “We have extensive knowledge of the materials and in manufacturing our products. It would have been very difficult for us to outsource this work.” Just five weeks after the fire, the company was fully operational in a temporary facility. With production under control, Anderson began to rebuild.

Building anew

As new owners, Desrochers, D’Amours, Lavoie had discussed plans for the future, including ways to reduce lead time, invest more heavily in R&D – both in testing and new product development – and increase sales. “After the fire, we were prepared to go ahead and do those things. We rebuilt the factory to be 20% larger and concentrated on enhanced material flow



“Improve: become more reliable, efficient and have more control over production.”



Anderson agricultural equipment is manufactured in Canada and sold worldwide.

and control over inventory and production,” said D’Amours. New inspirations were also implemented, such as an office door with direct access outside – “an idea that came from our experience rescuing the server,” D’Amours explained with a chuckle. In May 2013, just eight months after the fire, the Anderson employees returned home.

Looking past the flames

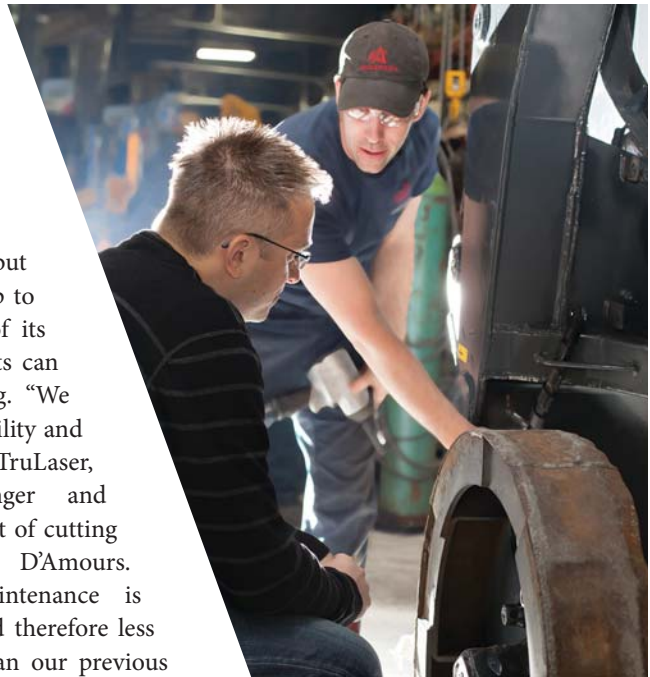
“We were fortunate to have good insurance and know now it was well worth the cost,” D’Amours emphasized. “In addition, we were able to achieve our goals for the first five years as well as double our sales in less than three years, despite the fire.” When asked their secret to success, D’Amours simply stated, “Improve: become more reliable, efficient and have more control over production.” For this, he credits a dedication to R&D. “We consider each product line and add features or products that will set us apart by staying abreast of each market and the diversity within.”

Inline bale wrappers, for example, are a favorite among farmers in North America where land is plentiful, while European farmers prefer machines to stack the bales in minimal space. In recent years, the European and new international markets drive Anderson’s new developments. This includes the Biobaler, a machine that harvests small diameter wood and vegetation used for energy. “In the past three years,” says D’Amours, “we’ve sold sixty machines, mostly in Europe where government incentives promote biomass energy to offset high energy prices.” He continues, “Without the development of new products, new customers aren’t interested in working with you. New products help build relationships.”

Efficiency is crucial given the ever-increasing product portfolio and rising costs of manufacturing, and Anderson credits its new TruLaser 3030 for doing its part. The company typically cuts 16 gauge material between 0.25 in.

and 0.375 in. thick, but may cut material up to 1 in. Side panels of its agricultural products can be up to 8 ft. long. “We really like the flexibility and efficiency of the TruLaser, the nozzle changer and automatic alignment of cutting head,” emphasized D’Amours. “In addition, maintenance is more simplified and therefore less time-consuming than our previous machine.”

“We are young owners of a young company, and know we still have plenty of opportunity improve,” says D’Amours. “We are thankful the previous owners, Dany Poisson and Ghislain Bernier, had an open mind and believed a business needs a team to grow in the future. They gave us the chance to become shareholders alongside the financial institution, capital regional et cooperatif Desjardins, and prove what we were able to do to grow the company.” □



Anderson Group Co.

Who: Anderson Group Co. Chesterville, QC, Canada. Established 1988. <http://grpanderson.com>

What: Manufacturer of innovative agricultural and forestry equipment

How: (2) TruLaser 3030, TruBend 5130, TruBend 5230

TruBend Cell 7000

The TruBend Cell 7000 is the world's fastest system for the automated bending of small parts. With an average cycle time of four seconds per bend including handling time, it delivers parts up to three times faster than conventional bending cells. In just 69 square feet of floor space, stacks of blanks become finished parts through a series of expertly coordinated moves performed by the TruTops Bend programming software. A look inside reveals how each component contributes for maximum speed and performance in automated bending.



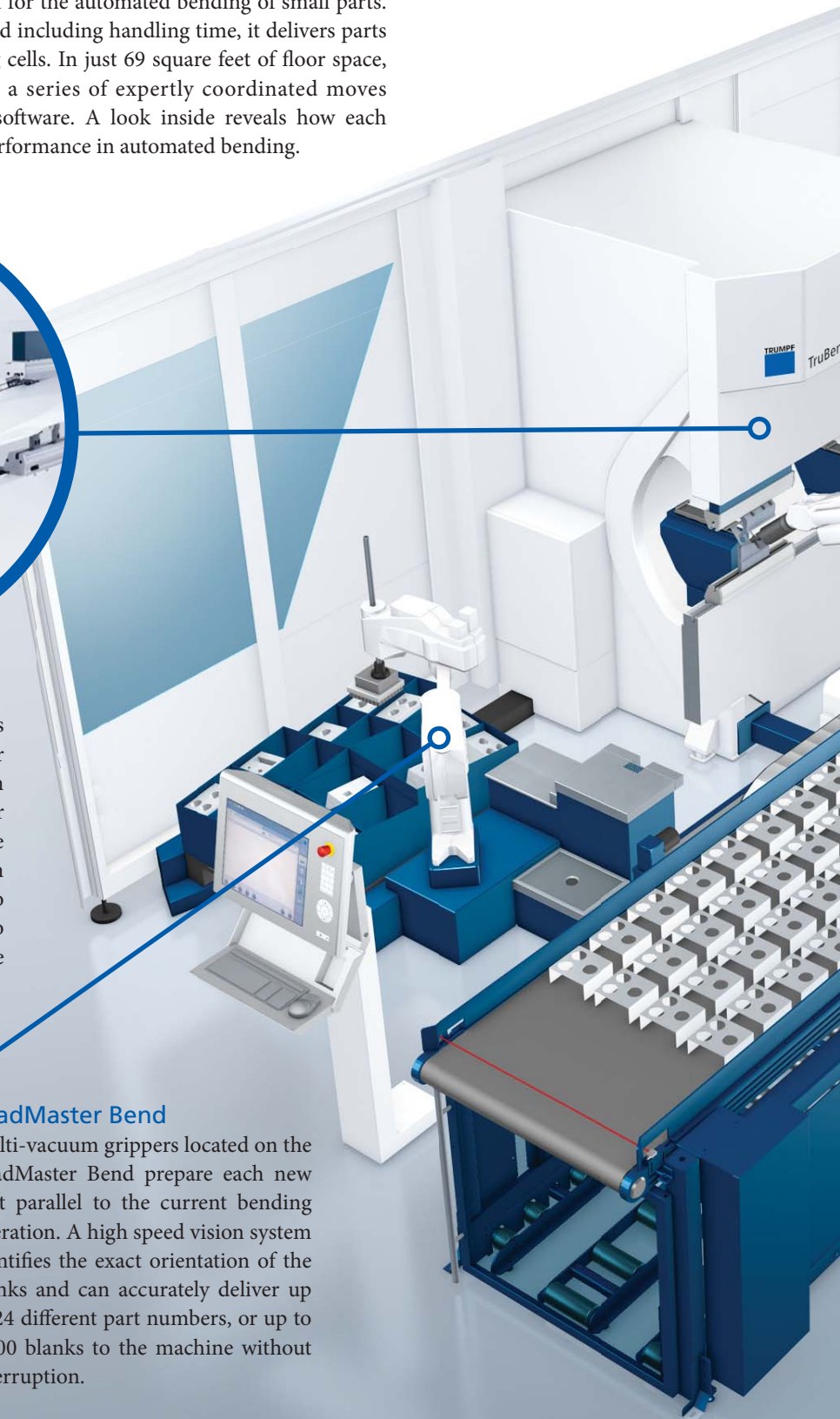
TruBend 7036 Cell Edition press brake

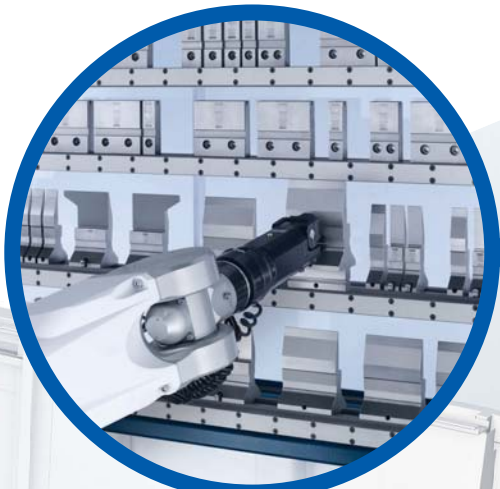
This highly dynamic press brake features a press force of 36 metric tons and an electric torque motor for high speed acceleration, achieving a maximum pressing speed of 180 ipm. Intelligent carbon fiber back gauges help position parts quickly, and include positioning sensors to ensure reliable quality from part to part. The innovative ram is divided into two 20 inch sections enabling the BendMaster to take the shortest traverse paths possible, eliminate re-gripping operations, and increase throughput.



LoadMaster Bend

Multi-vacuum grippers located on the LoadMaster Bend prepare each new part parallel to the current bending operation. A high speed vision system identifies the exact orientation of the blanks and can accurately deliver up to 24 different part numbers, or up to 4,800 blanks to the machine without interruption.





ToolMaster Bend

Reading an ID chip inside the tool, the ToolMaster Bend's integrated Tool Identification System (TIS) automatically identifies the tool type and position and communicates the data to the controller in the tool clamp and the support tracks. Since tools can be changed automatically as part of the production process, different jobs can be completed sequentially without operator intervention.



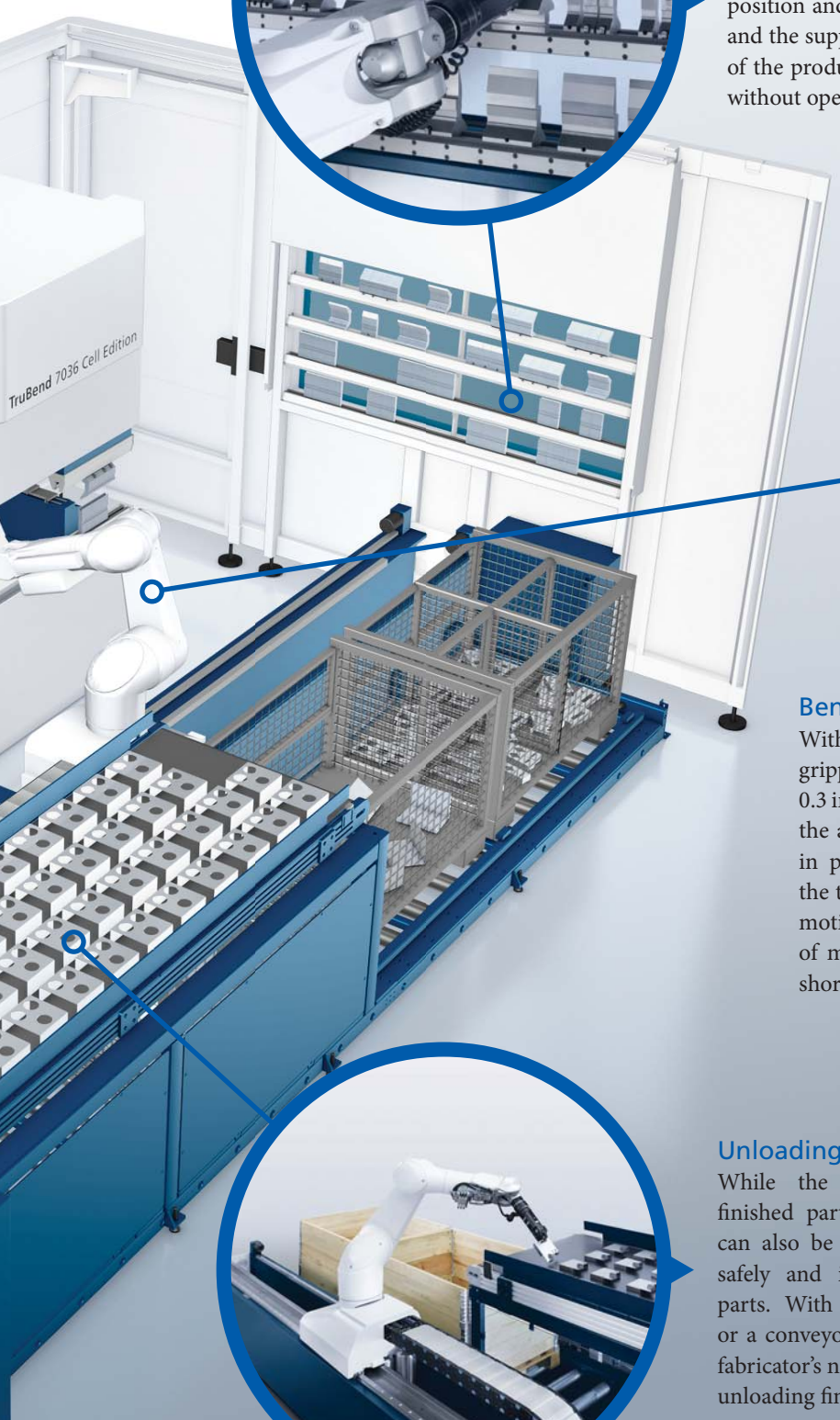
BendMaster Robot

With extreme precision and repeatability, the BendMaster's grippers easily position components with a sheet thickness up to 0.3 inch. The BendMaster also uses the ToolMaster Bend to select the appropriate tools without needing to change grippers used in production. Offline programming supports and optimizes the tool selection, bending sequences and precise robotic travel motions. The BendMaster 15 robot is purpose-built for the kind of movements needed to bend small sheet metal parts in the shortest possible time.



Unloading System

While the standard configuration unloads finished parts into boxes or bins, the system can also be equipped with a conveyor belt to safely and individually unload scratch-prone parts. With the pallet conveyor system, bins or a conveyor belt can be utilized based on the fabricator's need, providing a flexible solution for unloading finished parts now and in the future.



Building on the fundamentals

Quality service, state-of-the-art manufacturing, and a sincere approach to the customer and each other – this is the Webco Way.

“We don’t really use titles,” explains James West of Webco Manufacturing Inc. in Olathe, KS. “We are an employee-owned company and we conduct ourselves as we share the title of Owner.” This sense of ownership resonates throughout Webco now more than ever. The company, a provider of precision metal fabrication, transitioned from a private business to an employee-owned operation in 2005. With the opening of its new facility last April, Webco presented a first-class work environment for its employees and enhanced its capabilities as a supplier.

Making moves

James West was responsible for planning Webco’s new, state-of-the-art manufacturing space. West consulted Dr. Irani of Ohio State University to create a data-driven layout of the facility. One of Dr. Irani’s students, Aditya Ganesh, was brought on board as a summer intern to help plan this layout. During the planning stage, West visited several

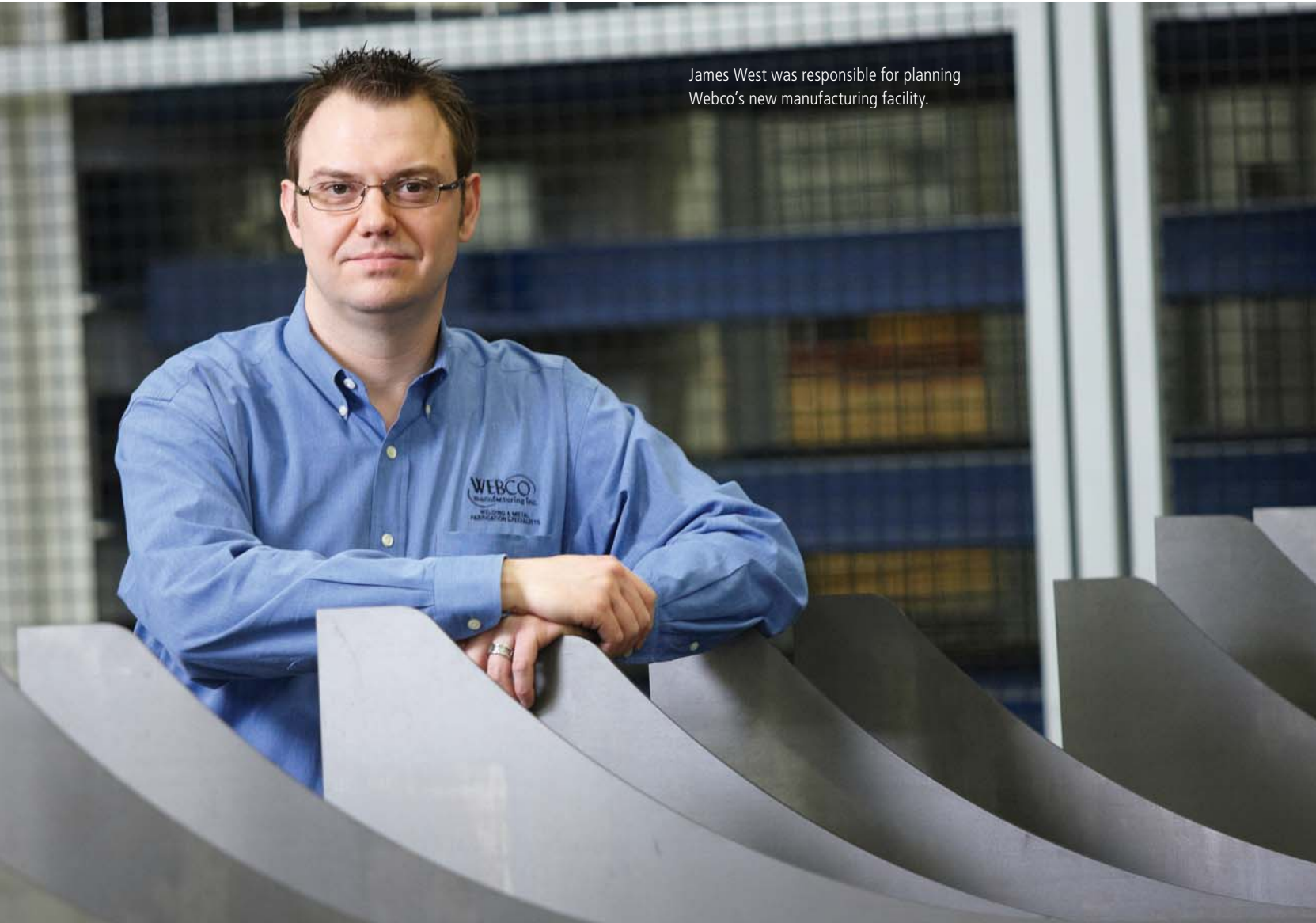
manufacturing facilities to determine how to best arrange Webco’s new space. At one site, an operator raved about a material storage system purchased from TRUMPF and the dramatic increase in productivity it caused. West explained, “The savings in time and money was impressive, and it came from the operator, not a salesman. It

was exactly what I wanted to hear.” With this tip,

West consulted TRUMPF to determine the best solution for his needs.

In the end, Webco purchased LiftMasters to support the TruLaser 6050 and the TruLaser 3040 laser cutting machines, and a STOPA storage system. West coordinated delivery to coincide with the transition into the new facility. He explained, “We focused the move around the TRUMPF equipment,” which included three press brakes, three laser cutting machines and a TruPunch 2020. “By moving one TruLaser at a time, and coordinating the press brakes and other equipment around them, we were able to maintain production throughout the process.” West recognizes Webco’s president, Gary Rettman, as an important part of this success. “Gary has been with the company since its inception. He has experienced three moves with Webco and provided tremendous mentoring throughout the process.”

“The savings in time and money was impressive.”



James West was responsible for planning Webco's new manufacturing facility.

Settling in

Once the move was complete, West optimized material flow. “In the past, material was moved by forklift and handled several times. Now, it is placed directly into the storage system.” Since a fork truck is no longer required, the steel remains scratch-free. “We have seen an immense savings in time and a dramatic reduction in hassle.” He continues, “The new system facilitates greater efficiency within our manufacturing operation, especially relative to just-in-time purchasing.” The company also has immediate access to the material inventory using the TruTops Fab software. Webco was also the first company in North America to use the Quickjob Module. The module serves as the connection between Webco’s ERP system and the machine to track parts and jobs throughout the manufacturing process.

In addition to improving material flow, Webco uses its software in a more traditional sense. For example, West

has redesigned a part for a waste management company to eliminate welding and a bumper for an automotive customer to eliminate breaks in the 0.5 inch steel part. “The TruTops software enabled me to redesign the bumper as a single part.” He continues, “The resulting design was stronger, less expensive to produce and most importantly, made the customer very happy.”

The company focuses on providing customers with the best quality results and uses TRUMPF technology to support this effort. Combining the software and machine capabilities has enabled Webco to make parts other companies cannot. West says, “We produce certain parts in tread plate or thin steel with the TruPunch 2020 and the performance cannot be duplicated – not even with a laser machine.” He continues, “The TruPunch performs so fast, it is worth its weight in gold.” As a result, Webco has diversified its customer base and continues to adjust to the



Kyle Kinder (L) leads Webco's fabrication department and works with James West (R) to best utilize the TruTops Fab software.

“The difference in the company is evident.”

ever-changing needs of its customers. West asserts, “When parts are difficult to manufacture or the time table is very tight, we are able to say ‘yes’. We take pride in conquering these challenges and in getting the parts done right.”

Compounding change

The building symbolizes a new way for Webco, from enhancements to the manufacturing facility, to a true focus on company fundamentals. “The difference in the company is evident,” West explains. “We take happiness, safety and work conditions very seriously.” The new facility, for example, features better lighting and a sophisticated dust collection system above the welding shop to provide a better work environment for the people, and ultimately, the machines.

Webco executives also released thirty-one “fundamentals” to define the values, principles and practices the company looks to promote. Every Sunday, an executive writes a personal message explaining what the fundamental of the week means to them. The message appears online and is distributed throughout the company. During the week, meetings start with a quick discussion of the fundamental so each employee can share thoughts on how it applies to work and life. West states, “We made Webco a place where people want to come to work, but it goes beyond that. If we can live by the fundamentals we are better people, too.

That’s the Webco Way.”

In this, West leads by example. Introduced to the company as a student through the Society of Manufacturing Engineers (SME), he now serves on the board of his local chapter. West asserts, “Each day I have the opportunity to create parts for the world around me and I feel proud when I see them heading down the road.” He continues, “This is a great family to work for, and I say ‘family’ because that is what we are. We have a great environment and we take care of our employees. I am thankful to be here and hope to provide the same for others.” For West, this is simply part of living the Webco Way. □

Webco Manufacturing Inc.

Who: Webco Manufacturing Inc., Olathe, KS., established 1980. www.webcomfg.com

What: An employee-owned company providing a wide range of manufacturing services and industrial fabrication.

How: TruLaser 6050, TruLaser 3040, TruLaser 3030, TruPunch 2020, TruBend 5230, TruBend 5085, TruBend 5320, LiftMaster, LiftMaster Sort, STOPA



TruLaser

Special

The competitive edge

Every TruLaser machine is based on decades of experience. The technologies we've developed enable customers to profit from the fastest cutting speeds, outstanding cut quality, and reliable processes. Take a closer look at the advantages of our latest innovations which keep your shop more flexible, competitive and productive.



INCREASED EFFICIENCY: technology for CO₂ lasers



With TRUMPF's **technology package** for CO₂ lasers, the nozzle and lens are automatically monitored and adjusted to ensure maximum productivity. The nozzle changer, combined with the cutting head positioning device can precisely replace a damaged nozzle without operator interference. RFID lenses, the new standard for the LensLine sensor feature, uses an RFID chip to monitor the condition and placement of the lens to guarantee perfectly timed cleaning cycles. The technology package leads to increased process reliability, reduced downtime and the best possible cutting results.

On TRUMPF's CO₂ laser cutting machines, **BrightLine** enhances the laser cutting process. The new nozzle technology accelerates the cutting gas to a high velocity and enables fabricators to achieve perfect cuts even in stainless steel up to 0.8 inches thick.

CoolLine enables the laser to cut contours that would otherwise be difficult or impossible to process including small sidewalls and difficult geometries in thick material. A water mist directed toward the laser beam at the work piece reduces heat transfer in the cutting zone. It also increases reliability when processing low-grade material or material of varying composition.

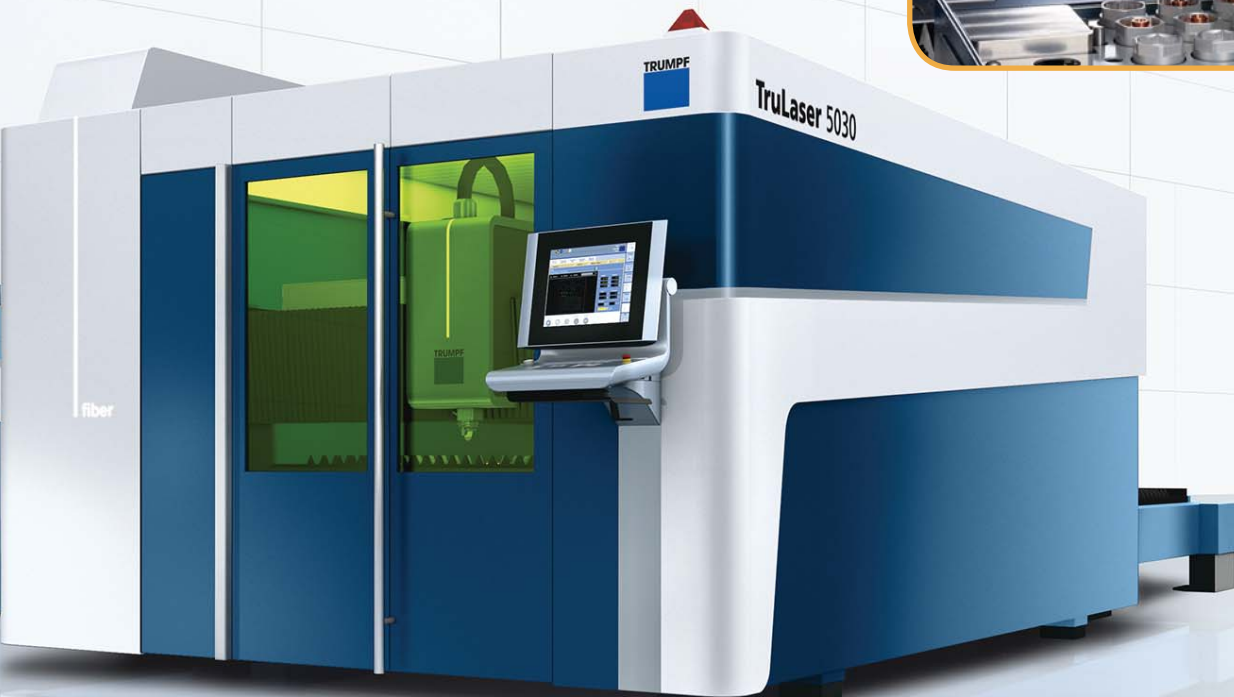




INCREASED PERFORMANCE: technology for solid-state lasers

BrightLine fiber has enabled the solid-state laser to be competitive in the world of thick sheet metal. For the first time, superior cutting results are possible in thick materials. This includes stainless steel up to one inch thick. The machine alternates between maximum productivity and quality in thin sheet to high-quality cutting in thick sheet with BrightLine fiber. The technology also enables fabricators to produce smaller holes and tighter contours than was possible before.

The **nozzle changer** for solid-state laser cutting machines takes information supplied by the program control to automatically select and insert the appropriate nozzle for the material or sheet thickness. The nozzle is changed during the pallet exchange and without operator intervention. Eighteen nozzle holders make sure the right nozzle is always on hand.





AUTOMATING YOUR LASER parts and material handling



Adding automation to your laser machine increases productivity, reduces labor, and lowers the cost-per-part. With the LiftMaster Compact, the laser machine is fully automated to load and unload while the machine is in motion and within a minimal footprint. No operator intervention is required. The LiftMaster Compact's small footprint and 90 second cycle time are designed to save manufacturers time and money.

Automation for loading and unloading parts can be combined with part handling options such as the PartMaster. With this, a conveyor is used to move processed sheets to a sorting station so an operator can unload parts while the machine is running. By conveying the parts towards the operator the PartMaster also considers the ergonomics of the process. Optimal working conditions prevent early fatigue, boost productivity and ensure the long term health of employees. Using the PartMaster, the operator can achieve up to a thirty percent increase in sorting productivity.




Training in Monterrey

TRUMPF Inc. expands class offerings in Mexico

Every year, thousands participate in TRUMPF's International Association for Continuing Education and Training (IACET) accredited training program to stay on top of the latest technology and ensure they get the most out of their TRUMPF equipment. In response to a growing demand for training in the Mexican market, TRUMPF recently expanded its training program at its Monterrey, Mexico facility. While customers in Mexico have had access to training on their TRUMPF equipment for years, the expanded program includes additional courses to accommodate new interests as well as more frequent classes.

Classes are conducted in Spanish, in our state-of-the-art training facility featuring a computer lab and training classrooms. The program features classroom learning as well as hands-on practice led by expert training professionals. Current classes include operator and maintenance training on specific machine models as well as software training. Additional offerings will be available in the coming months.



 To learn more about TRUMPF's training program customers can visit https://www.mytrumpf.com/us_training/. Information includes course overviews, prerequisites, schedules and registration.

Operator Courses:	Maintenance Courses:	Programming Courses:
<p>TruLaser 1030 For those with limited/no laser operating experience. Learn material cutting and processing parameters.</p> <p>TruLaser 3030 (L20) Learn cutting fundamentals, techniques, and cutting parameters. Evaluate cut quality and maximize machine cutting performance.</p> <p>TruBend Series 5000 Learn bending fundamentals, programming, bend sequence, and ACB. Select appropriate tooling and create quality parts.</p>	<p>TruLaser 3030 Maintenance 1 Focus on the laser system and optics. Perform beam delivery alignment, maintenance tasks, and clean internal and external optics.</p> <p>TruLaser 3030 (L20) Maintenance 1 Focus on the laser system and optics. Perform beam delivery alignment, maintenance tasks, and clean internal and external optics</p> <p>TruBend Series 5000 Learn maintenance techniques, prevent breakdowns, resolve common problems and reduce machine downtime to a minimum.</p>	<p>TruTops Laser Import and export drawing files, program single parts, and nest parts. Draw parts using the TruTops CAD module. Work with macros, nest with TruTops manual and automatic nesters and generate NC codes.</p> <p>TruTops Punch Import and export drawing files, program single parts, and nest parts. Draw parts using the TruTops CAD module. Work with macros, nest with TruTops manual and automatic nesters and generate NC codes.</p> <p>TruTops Bend Create GEO drawings, unfolded layouts and setup plans. Manipulate tool selection, bend sequences, backgauge positions and part loading.</p>



Alan and Marilyn Spreet are a dynamic duo as co-owners of TMM Precision



From metal sculptures to metal fabrication

In its community, TMM Precision supplies more than just sheet metal parts.

In 1975, Army veteran Alan Speert could be found designing decorative metal artwork at home in Tucson, AZ. As his wife, Marilyn Speert remembers, “He was always making metal sculptures in the carport with the cat on his lap!” His work was well-received at local craft fairs and soon, Alan’s hobby became a way of life. The duo founded The Metal Man, Inc. and opened a retail store with space for customers to watch Alan weld his creations. As it became more established, The Metal Man began selling wholesale and moved into the 10,000 ft.² facility it occupies today.

Alan explains, “We worked hard to make a living but in 1998, we were introduced to TRUMPF and laser cutting, and suddenly things began to change.” Intrigued by the technology and the cleanliness of laser processing, Alan and Marilyn invested in a TRUMATIC L 2530. “We bought it to cut decorative forms, but then people approached us for fabrication work and we transitioned into TMM Precision,” Alan explains. “We enjoyed staying home in Tucson, offering our job shop services to the community.” With an unmistakable devotion to their neighbors, it is not surprising that TMM Precision’s first customer as a job shop is still a loyal client today.

Defining a business

With a steady stream of laser cutting orders, the couple was eager to add bending to the company’s repertoire. “Our first TRUMPF press brake performed well and we loved it. We eventually upgraded to a TruBend 5085 because the longer bending length gave us the ability to bend any part we could cut,” says Marilyn. TMM Precision also recently purchased a TruBend 7036 and TruLaser 1030 fiber to “complement our existing equipment and allow us to divide the workload,” as Marilyn explains.

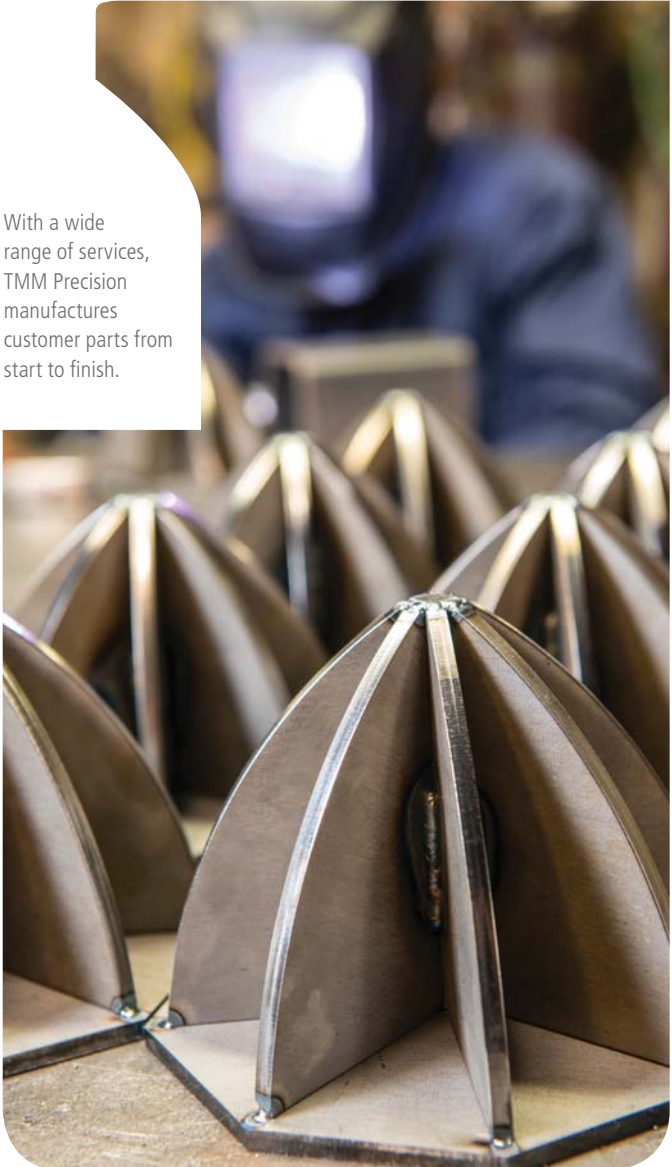
As a job shop, the company sees a wide variety of applications including aftermarket truck parts, lighting fixtures, frames for telescopes, motorcycle components, and electrical enclosures. Alan even carries a titanium money clip, produced

by TMM Precision and given to him by the happy customer. “We never know what will come through the door. It’s challenging and we enjoy it,” says Alan. He especially loves taking an idea a customer brought in on paper and recreating from sheet metal. “One special project was a sign we helped design to commemorate a team of firefighters who had passed away. It was a work of love, not business, and we were honored to donate that piece.”

“We were introduced to TRUMPF and laser cutting, and suddenly things began to change.”



The TruBend 7036 enabled TMM Precision to bend small parts more efficiently.



With a wide range of services, TMM Precision manufactures customer parts from start to finish.

Keeping busy

TMM Precision is able to process anything from prototypes to thousands of parts at a time. Alan states, “We have two lasers and two press brakes, and all are busy. The machines are highly reliable and we are very happy.” The TruLaser 7036, or “the little guy” as Marilyn calls it, bends small parts while the TruBend 5085 is used for large parts and thicker materials. For laser cutting, parts under 0.25 inch are processed with the TruLaser 1030 fiber while thicker materials are cut with “the workhorse”, or TRUMATIC L 2530. This machine is also used to produce the company’s own line of steel reactive targets for law enforcement, shooting ranges and competition. “We cut 3/8 inch thick 500 Brinell hardness steel plate on the TRUMATIC L 2530,” says Alan. With a laser, the heat affected zone (HAZ) is minimal, which prevents the steel from softening and makes it less likely for a bullet to penetrate the material and unleash potentially harmful fragments.

More than metal fabrication

Alan and Marilyn Speert credit TRUMPF technology as an important part of their success. “Our business was built with TRUMPF’s help. When we tell people we use TRUMPF machines, they recognize we invested in great equipment, and that has definitely earned us new business,” states Alan. Not only do the owners pride themselves on delivering parts on time and of high quality, they also provide exceptional customer service. As Marilyn confirms, “The relationships we build with our customers are very important to us. We look to accommodate all needs and never refuse a job because it is a short run or small project.”

Fabrication work, which also includes welding, machining, and secondary processing, keeps the company’s twelve employees incessantly busy, yet Marilyn and Alan always find time to support their community. “We work with a racing club at the University of Arizona –Marilyn’s alma mater,” says Alan. “Students design car parts and we donate the materials and laser time. They are incredibly bright and often surprise us with what they create.” Alan and Marilyn also feel the same way about the robotics team they work with from the local high school.

With all the work being done at TMM Precision, Alan has yet to complete a decorative metal piece he designed years ago with Marilyn. Lightheartedly, he explains, “I promised my wife a sculpture for the house, but never got around to making it. I guess now I’ll have to find time for it in the schedule!” □

TMM Precision

- Who:** TMM Precision, the precision metal fabrication division of The Metal Man, Inc. Tucson, AZ. Established 1975. <http://themetalsman.com/>
- What:** Provider of precision metal fabrication and pre-production services.
- How:** TRUMATIC L 2530 (TruLaser 2525), TruLaser 1030 fiber, TruBend 5085, TruBend 7036



Jose Musa de Leon (R) and his son, Jose Musa Pader, provide quality sheet metal fabrication services for customers in Mexico and the U.S.

Opening doors

Versatile technology and a skilled workforce help Jose Musa and Mexican manufacturer DIMET keep high quality work coming in and open the door to new business.



Jose Musa Pader, General Manager of DIMET

Just 170 miles from the U.S. Port of Entry at Laredo, Texas and one hour from Monterrey, Mexico, Diseños Metalicos del Norte (DIMET) is well-positioned for opportunity. With easy access to customers in the United States and Mexico and to skilled labor from respected local universities and technical schools, the metalworking and light manufacturing company is thriving in its Saltillo, Coahuila, Mexico location. In the seven years since Jose Musa became general manager, DIMET has grown from six employees to eighty and close to \$10 million in revenue. The company serves customers in a variety of manufacturing industries and will soon launch its own garage door product.

Opened with diverse technology

TRUMPF technology has been part of DIMET since the company started in 2002. “My father, Jose Musa de Leon, a visionary entrepreneur and investor, founded DIMET with Juan Saucedo, a skilled engineer with a lot of experience in the metalworking industry,” explains Musa. “After a careful study, they bought a laser cutting machine, a punching machine, and a bending machine – all from TRUMPF.”

At its inception, DIMET’s primary goal was to use the three machines to create a process with the flexibility to serve many different markets. Now, DIMET’s vastly expanded collection of TRUMPF machinery, consisting of four laser cutting machines, two punching machines, and two press brakes, supplies parts to clients in the aerospace, automotive, electronics, agricultural, construction, railroad and other industries.

Quality investments satisfy customer needs

DIMET’s fleet of high-tech machines gives its skilled team the capability to handle a wide variety of work and fosters positive customer perceptions about the company. “Our ability to offer the whole package is important for our clients,” says Musa. “If we only had a laser, customers would just think of us as a laser company. Because we offer a range of technologies, our clients consider us a complete solution provider. That’s part of why we’re so strong in the market.”

This market strength is reinforced by DIMET’s quality standard achievements: ISO 9001-2008, Six Sigma Green Belt, and certification by the American Welding Society. “Quality certifications are essential,” Musa adds, noting the stringent requirements of Saltillo’s strong automotive industry presence. “Our clients are confident we have the structure to solve their problems and provide high quality products.”

Consistently producing high quality parts has been essential to DIMET’s success. The ability to sustain excellent work in a flexible, precise and cost-efficient manner was a chief

reason the company recently added a TruLaser 3040. Although Musa likes to keep DIMET’s machines as productive as possible, company policy dictates the purchase of new machinery when 80 percent capacity is reached. “We always want to be able to meet our clients’ changing needs,” he emphasizes.

Flexibility keeps prospects open

Manufacturing DIMET’s diverse products, including parts for bulldozers and electrical cabinets, requires equipment with the flexibility to quickly create high quality parts in different material types and thicknesses up to one inch. TRUMPF laser cutting technology has been a perfect fit for the wide-ranging materials used and parts produced for DIMET customers.

The quality DIMET achieves with TRUMPF technology allows Musa to charge a premium for its work. “Our competitors may be cheaper,” says Musa, “but no one else in the market can match the quality of our cuts. The productivity and high quality parts produced on TRUMPF machines more than make up for the investment. The machines help us stay profitable and keep our clients happy.”



“No one else in the market can match the quality of our cuts.”

Juan Saucedo Rodriguez, Director of Operations is proud of the work DIMET supplies to its customers.



DIMET manufactures steel panels for its own line of high-quality garage doors.

Having both laser cutting and punching technology gives DIMET the freedom to let the job determine the tool, rather than the tool restricting the job. “We use the different advantages of the punching and laser machines to meet client requirements,” Musa explains. As for press brakes, “we save the TRUMPF bending machines for parts requiring the highest accuracy and quality bends,” he says.

Unlocking future opportunities

In addition to manufacturing high-quality parts for clients, this spring DIMET will launch its own product: garage doors. Most garage doors currently available to Mexican consumers are expensive imports made of 24 gauge material. DIMET plans to use heavier galvanized steel for the panels and employ its punching and bending machines to manufacture hinges and other supporting pieces. “Because we’re using thicker material, the garage doors we produce will be stronger,” says Musa. “Our goal is to reduce the garage door’s cost and provide a high-quality, affordable product to the Mexican people. I think everyone with a car should be able to own a garage door.”

Musa plans to keep the company advancing and achieving additional quality certifications. He’s working to build new business as well as a 21,500-square-foot addition to house new metalworking projects for industrial warehouses and commercial buildings.

Growing and improving conditions is a key company philosophy and a tradition that runs deep at DIMET. “My parents and grandparents were very hardworking and emphasized that work should contribute to the community, not just make money,” Musa stresses. “Everyone in the company grows and works together as a family. We’re all proud of what we’ve achieved. As we look to the future, we know the only restrictions we have as a company are the ones we set for ourselves.” With that attitude and TRUMPF technology, new opportunities are bound to keep opening up for DIMET. □

Diseños Metalicos del Norte (DIMET)

- Who:** Diseños Metalicos del Norte (DIMET), Saltillo, Coahuila, Mexico. Founded in 2002, www.dimet.net
- What:** Full service supplier of metal fabricated and powder painted parts, metalworking projects for industrial warehouses and commercial buildings, and manufacturer of garage doors.
- How:** TruLaser 3040, 2 x TC L 4030 (TruLaser 3040), TC L 3030 (TruLaser 3030), TC 5000 (TruPunch 5000), TC 2020 (TruPunch 2020), TrumaBend V230 (TruBend 5230), TrumaBend C120 (TruBend 3120), Qualifier



With a creative mind and a careful hand, Alasha Lantinga turns metal clay into wearable works of art.

Breaking the mold

Alasha Lantinga sculpts precious metal clay into jewelry with form and funk



Alasha Lantinga comes from a family that seems to have an artistic gene. “Almost everyone in my family is creative,” she says. “My mom paints as a hobby, my uncle is a photographer, and my aunt dabbles in every creative outlet you could imagine.” After years of hard work, Alasha considers herself quite lucky to have turned her creative visions into a full-time job. She works as a jewelry artist, creating most of her original pieces with the fascinating medium of precious metal clay.

Alasha grew up in Victoria, British Columbia, Canada, and has been creating jewelry ever since she was a child. “I have always been artistic,” she recalls. “Even as a kid I was making jewelry with plastic beads.” In 2009, she began working for a custom jeweler where her interest in jewelry-making really began to take shape. It was at this time she was introduced to gemstone beads and precious metal findings, and from then on she was hooked.

“While working at the store, I took a course it offered in metal clay,” she remembers. That is when her distinctive technique really took off. “Metal clay is now my favorite medium to work with,” Alasha says. “I use it almost exclusively.” Precious metal clay (also called PMC or, simply, metal clay) consists of an organic binder combined with very fine particles of metal: either bronze, silver, gold, or copper. Alasha works primarily with bronze and silver.

The method of working with metal clay is a ten step process, which begins with rolling out the clay and stamping it with her chosen design. Alasha loves nature and finds herself inspired by it, so a lot of her designs involve earthy or floral motifs. “Other ideas just pop into my head,” she says. “I really love playing with different shapes and textures.”

Once a piece is formed, filed, sanded and drilled, it is fired in a kiln. Alasha’s at home workspace includes a studio and small





Bronze patinaed earrings stand ready for their gemstones.



“I really love playing with different shapes and textures.”

jewelry kiln. Bronze pieces are fired in carbon to a temperature of 1545°F, while silver is fired on an open shelf reaching temperatures up to 1655°F. The hot temperature burns off the binder and a solid metal piece results.

When the metal clay has cooled, Alasha’s vision begins to crystallize as she adds different elements and a distinctive style to each piece. The bronze pieces are manually patinaed; a process that naturally happens over time but which Alasha accelerates to give the jewelry a stunning turquoise-colored accent. She antiques some of the silver pieces by carefully blackening each crevice and polishing them, until they appear beautifully contrasted from the design.

Alasha’s unique designs were a hit at the local markets and craft fairs she would attend. Ultimately she was approached by small boutique owners who expressed interest in carrying her line. Now she primarily sells her jewelry wholesale to different independently-owned shops in several Canadian provinces, including the gift shop of the Royal British Columbia Museum.

While she loves her trade, creating jewelry in such a unique style is not without its challenges. “For instance, bronze clay can bubble or crack in the kiln,” she explains. “It can be frustrating when I put a lot of work into a piece and it ends up unusable.”

Despite the obstacles, Alasha remains undeterred. “My technique has evolved a lot since I first started making jewelry. I use more elaborate designs and am always trying to learn and incorporate new elements in my art.” As the years go on, her creations will continue to transform while remaining beautiful and unique – just like the precious metal clay from which they are formed. □

Tougher than a Titan

How the discovery and development of titanium revolutionized manufacturing

Titanium is one of the strongest metals known to man. In fact, this popular high-performance metal has the highest strength-to-density ratio of any other metallic element on Earth. This quality combined with its incredible resistance to corrosion makes it an ideal metal for many manufacturing applications. It is often alloyed with other metals, such as aluminum or iron, to create a lightweight but very strong material that works well in the production of air and spacecrafts, naval ships, cars, medical prostheses and dental implants. It is even used for jewelry and cell phones.

Considering titanium's widespread worth, it is fortunate that it is also one of the more abundant elements found in the Earth's crust, ranking seventh among all the metals and ninth overall. It was first discovered in Great Britain in 1791 by an amateur geologist named William Gregor. Yet it was not until a few years later that it was specifically identified, by a German chemist by the name of Martin Heinrich Klaproth. He named the new element "titanium" after the Titans, the very strong and powerful god-giants of Greek mythology.

Because titanium is always bonded to other minerals in its natural state, the extraction process can be grueling and expensive. It wasn't until 1910 that a metallurgist named Matthew Hunter first successfully reduced ore to metallic titanium to a purity of 99.9%, effectively inventing the now outmoded Hunter process.

The process involved heating titanium carbide with sodium in an airtight cylinder called a "metal bomb." Dealing with elemental sodium in high temperatures can be very dangerous, so the first experiments were done outside, on the football field of the Rensselaer Polytechnic Institute in eastern New York. While his process produced very high

quality titanium, it was unable to do so in large quantities, making it commercially inefficient.

In the late 1930s, metallurgist William Justin Kroll, originally from Luxembourg, had fled Europe to escape the Second World War and was working in America. He had already perfected precipitation hardening of stainless steel, a process which uses heat to strengthen metal, and soon became interested in exploring the unusual properties of titanium. He used the Hunter process as a starting point, but began to experiment with different additives to great success. Eventually, his own Kroll process was developed and patented.

This more economical process involves combining raw titanium ore with chlorine, before mixing it with liquid hot magnesium to create a porous titanium "sponge." The magnesium chloride is then squeezed out and the titanium is distilled and purified. It is melted down and formed into ingots. From there, the titanium can be milled into standard shapes such as plates and bars, but is also able to take on more unique forms to meet virtually any manufacturing need. Today, 75 years after its original development, the Kroll process is still the preferred method of producing titanium.



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TRUMPF

A point of perfection

Exceptional creations are a daily occurrence at Lamson & Goodnow. “We want to produce the finest quality — handmade knives at fair prices, destined to become heirloom pieces down the line,” emphasizes CEO Brian Hayes. Today, this New England manufacturer still ships its cutlery from the same buildings in which the company began. Backed by 176 years

of expertise, these distinctive knives are created from the skills used by Lamson & Goodnow craftsman for more than a century and the precision capabilities of the TruLaser 1030 fiber and TruMark Station 5000. This perfect mix of age-old tradition and cutting edge technology is loved by professional and amateur cooks worldwide. www.lamsonsharp.com