MC MACHINERY SYSTEMS, INC.
a subsidiary of Mitsubishi Corporation

EDM | LASER | WATERJET | MILLING | HIGH-SPEED VMC | PRESS BRAKE
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THE EDGE

CUTTING EDGE INFORMATION AND INSIGHTS

AUTOMATION NATION THRIVES WITH MITSUBISHI LASER

The fabrication market is strong right now, with little evidence of things slowing down. Metalworking forecasts for 2014 project continued growth, particularly where it relates to capacity utilization. In other words, adding capacity to increase productivity and output.

Mitsubishi Laser is leading the charge; with more than 50 percent of machines being installed into the market with automation. Automation adds productivity to your shop by running around the clock, loading and unloading material and maximizing that material to get the most out of every sheet.

To complement our extensive lineup of laser equipment is the most versatile and expandable automation offering on the market. From a simple pallet changer to a multi-tower, multi-machine system, Mitsubishi's extensive automation offering has the right solution for your needs.

Automation solutions include:

- Compact systems for limited floor space
- Full load/unload cycle time of approximately 65 seconds
- Up to one-inch full load/unload capacity

Systems include:

- Tandem load/unload
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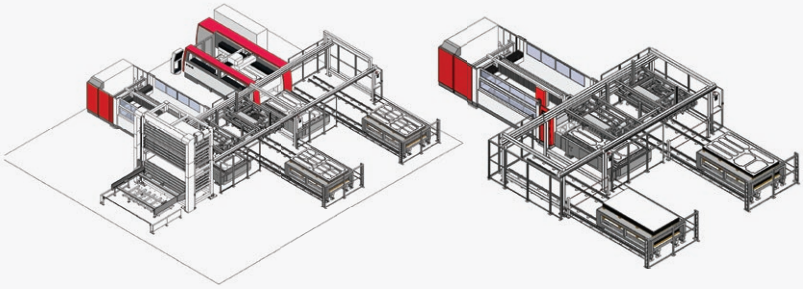
- Multiple machines
- Break-in stations



INSIDE THIS ISSUE

LASER AUTOMATION: STAND ALONE TO FULL AUTOMATION?

WEISGRAM METAL FAB

WEST FARGO, ND

When Joel Weisgram started Weisgram Metal Fab, West Fargo, N.D., in 1982 as a two-person welding shop, he laid a cornerstone philosophy to spend less time making promises and more time keeping them. More than 30 years later, the employee count is now 250 plus, but the same devotion to delivering on promises has permeated the company.

Now, Joel owns the business with his wife Kay and two sons, Ryan and Chad Weisgram. The family has grown business organically over the years, from the initial 20,000-sq.-ft. shop, to, several moves later, the current 220,000-sq.-ft. facility. Growth and expansion has been primarily due to word of mouth and reputation.

FROM SUGAR BEETS TO INTERNATIONAL OEMS

One major turning point early on was the transition out of a single-industry and primary capacity, and into a diverse client portfolio, shedding their captivity to a single corner of the market.

"In the beginning, the core of our business was making large machines called sugar beet pilers. Semi trucks would unload their stocks of sugar beets at satellite locations around the area, and we built the pilers that managed the sugar beet stock. At points in time, we built as many as 12 of those in one year. There are more than 6,000 part numbers and they weigh upwards of 250,000 lbs., so that's no small project," says Chad Weisgram. "We were required to build the pilers in six months or less each year, meaning we had to find other things to do in the offseason. When doing so, we started to do production for a partner in the area. That one customer helped in getting the second, the second assisted in getting the third and we grew from there."

Recognizing that multiple clients – or as they were once called, the off-season clients – were the path to further growth, WMF sold the beet piler portion of the business and began component manufacturing. From a Fargo-centric, sugar beet-dependent job shop grew an international business selling components to some of the world's largest OEMs.

"The business was founded on welding, so that's been our core competency. But as our customers needed different parts, we expanded our welding and fabrication facilities to accommodate them – that's how our business has evolved," Weisgram says. "We have a CNC machine shop, a powder coating facility, automated press brakes, tube lasers, manual and robotic welding. The more operations we can do in house the better."

THE MOVE TO LASER

WMF bought their first laser nearly a decade ago. They had been outsourcing their laser cutting needs, but customers were pushing them to come up with better solutions and reduce costs. Their first purchase was one stand-alone laser, and that led into six stand-alones within a five year period. Once WMF had six lasers up, running and acting independently, they began looking into automation for the sake of efficiency.

"With the unemployment rate as low as 3 percent in the area, skilled labor was hard to find. We realized that we needed to find ways to be more productive with fewer skilled operators," Weisgram says.

The first venture into automation was with the Mitsubishi EL4, which was a challenge, but, Weisgram says, a good

kind of challenge. After going from stand-alone machines with manual loading and unloading to having a fully automated system running 24 hours a day, the conversion definitely was an adjustment. The throughput skyrocketed so they had to be on top of parts picking, sorting, tabbing and moving the parts onto the next operation. "Automation forces you to look at things different. The load and unload system works so well that your focus changes from keeping the lasers running to processing through a massive amount of cut parts," Weisgram says.

"It took us a while to get a hold of it, but once we did, we saw that it was certainly the way to go," Weisgram says. "Then, we started to look at more automation, more cells, bigger cells, more ways to handle the material less, ways to generate more throughput with less effort."

Currently, WMF has eight Mitsubishi NX

series 6kW lasers attached to a 322 shelf "river" system, which hold up to two million pounds of steel. WMF's lasers are running 132 hours per week, mostly cutting mild steel, 16 gauge through ¾ in., the majority being 1/4, 3/8 and 1/2 in.

Ultimately, the goal is to produce a more cost effective part, deliver parts on time and meet their customer's demands. With the automation that Weisgram has today, that goal has been achieved. The company has been able to produce more parts per hour and process more steel per hour with fewer operators and less material handling.

IF WE COULD DO IT OVER AGAIN

If WMF could go back in time, they would have started with automation instead of having to make the transition from stand-alone. They admit that it was difficult for to buy in on the considerable up-front costs until they actually made the leap. "And it's worth every penny. The river system pays for itself and it's hard to put a dollar value on that. The throughput and the ease of use for employees are definitely there. There's a much better ROI on automation compared to stand-alone because the machines just perform better. The system is doing what it's meant to do and that's cutting parts," Weisgram says.

The river system is constantly feeding the machine, so a laser isn't relying on an operator that might be on break or otherwise be occupied. Automation eliminates a lot of the variables and just keeps pushing. To WMF, lasers are designed to run as many hours as you can feed them. And that's what they are seeing today – automation just keeps moving and keeps the lasers running. "With some good planning and good nesting, there's no reason for them to stop except for regular maintenance," he says.

A major factor in choosing Mitsubishi was the ability to plug and play with more machines over the years, as the only limiting factor to adding machines to the system is square footage. Weisgram hopes the company will continue to grow and expand the laser department even further, as new machines and technologies become available. The next step would be to go from 8 to twelve lasers to further boost production.

Software that speaks the language

An important point in choosing Mitsubishi for WMF was its use of Ncell software. The highly advanced automation combines Mitsubishi Laser components with Ncell automation software, providing the lowest part costs with the highest throughput. Ncell eliminates unnecessary steps in the workflow process, improves material utilization and reduces indirect labor cost.

"We have completed a full-circle system. Our ERP system talks to Ncell and vice versa. The river system also can communicate with our ERP system. We're using every part of Ncell, including iManage and iRemote. These modules help us to identify job cost down to the second and material cost down to the square inch in an electronic transaction," Weisgram says. "Also, the purchasing department is able to see material requirements through the software, which helps prevent material shortages."

Most of WMF's customers are placing orders through EDI or other electronic methods, which dump the data directly into the company's ERP system. Order data is then transferred directly into Ncell. On an average day, WMF has around 14,000 live orders in their system and are able to manage the data to and from the lasers with only a handful of people.

PHILOSOPHY OF CONTINUOUS IMPROVEMENT AT LASERFAB

LASERFAB
PUYALLUP, WA

Regardless of your type of metalworking shop, it helps to have a mission statement, a mantra, a code or a general way of working that serves to inform and guide the personality of the business. Now, that's not to say that you can't call an audible from time to time, but it's beneficial to have everyone in the business working from the same playbook. Kevin Frazer, president and CEO of Laserfab Inc., has relied on what he and his team call the continuous growth and improvement philosophy, and it has served Laserfab well.

COMPANY SNAPSHOT

Laserfab is primarily a metal fabrication company specializing in laser cutting, forming, and welding of steel, stainless, and aluminum components and assemblies, and employs 60 people in three locations in Washington State. The Seattle/Tacoma area shops in Puyallup and Redmond are 27,000 and 18,000 square feet respectively, while the Moses Lake location in Central Washington is 24,000 square feet. Over the years, Laserfab has used this continuous growth philosophy to grow from their original Puyallup location into the newer two locations, adding layers of technology incrementally along the way.

From what began years ago from two stand alone lasers, the company now has seven Mitsubishi lasers, including 6 Mitsubishi laser LVIIIs and LVIVs, and most recently, a Misubishi eX Laser. With fabrication a core competency, the company also has two Dener press brakes and a Toyokoki, in addition to other metalworking and forming equipment. But as important as the lasers themselves, it turns out, are the new automation packages. The company boats two material handling towers (one in Redmond, the other in Moses Lake) and one EL4 load/unload system located in their Puyallup facility.

"Our largest customer is Genie Industries, a Terex Company," Frazer says. "We support their campuses in both Redmond, and Moses Lake, Wa. We are a production job shop first and foremost, as we have customers in most industries including the man-lift [Genie Industries], aircraft, electronics, displays, marine, architectural, and other industries. Our quality and delivery are close to world-class, and our service and flexibility are excellent, and continue to be the constant to our success."

Laserfab walks the walk, too, having received supplier-of-the-year recognition from Terex thanks to a unique kanban based just in-time inventory and delivery environment – which was expanded to several other customers. As a bonus, pricing is extremely competitive and the company remains very profitable as far as the fabrication industry is concerned. Laserfab also assists design and engineering of special projects which is helpful to many customers.

A PHILOSOPHICAL APPROACH

The continuous improvement philosophy at Laserfab really speaks for itself; it represents a commitment to a constant, incremental improvement strategy. This manifested most recently in the movement from stand alone laser machines to fully automated material handling towers. One key element to the approach is the word 'continuous' – meaning Laserfab never

wants to be resting on its laurels or content to take a breather in improving. This keeps the company sharp and always looking forward.

For instance, he sees the advantages of the Mitsubishi river systems too, which could potentially be the next step or a step down the road. As Laserfab eyes the future, the operators are getting used to the new towers and dual laser systems, and growth is really starting in terms of production and efficiencies.

"We really do value the partnership we have with MC Machinery. And that means a lot of things, not just service, maintenance and rapport with the team. Our continuous improvement philosophy didn't slow down in 2008 and 2009, when a lot of fabrication and job shops were slowing or contracting. Even through the down economy, our two companies were able to work together to arrive at certain financing considerations that helped us survive and flourish through those tougher times and continue to improve," Frazer says. "We worked together, and once we got through that, we went back to original program, so we have survived together in good times and bad, we trusted each other throughout."

In fact, right out of the gate from the 2008-2009 lean years, when they still only had two locations, they opened their new Redmond facility in July 2011. This was the company's first foray into the tower automation system, a significant step forward. And it was such a success that it spawned a second tower, retrofitting the existing setup at the Moses Lake location.

"The continuous improvement philosophy really is ingrained in us; it's a central part of our younger management team. It was important, and that's why we picked Mitsubishi," Frazer says. "A great resonator, low consumable costs – we had the confidence that when the technological changes came, that we'd be on the forefront, and we moved forward with each technological step.

All along the way, Laserfab has seen improved cut quality, improved cut speed – virtually every metric improved incrementally with each step. In the end, Frazer's team thought 'OK, we need to do this as much unattended as we possibly can.'

"Now, we have the young guys programming the parts, and only one guy needs to be watching two machines, so that means leaner staffs of really highly qualified employees. The controls are easy to learn, and the equipment runs itself. We can have one senior trouble shooter in the shop at any given time, and we can keep everything moving and running. "

Because Laserfab runs lights out much of the time, the most senior or experienced staff are concentrated on being available when the most work is going on – changeovers, etc. The company typically runs three shifts, sometimes a fourth weekend shift, so the machines are always going. These guys can also help to manage and train the less experienced guys.

"We have a really good solid staff, and we love to have our own personal farm team,as we train from within; this means no bad habits," Frazer says. "With our Just-in-Time manufacturing style, we have to hit tight delivery windows, and do so every day at each facility. We have a dynamic, demanding customer base, so we have to have impeccable systems and the equipment has to be running to meet requirements. All of that factored in, Mitsubishi and MC Machinery was the perfect match for us, and the perfect company with whom to grow, if consistent improvement is part of your strategy."

FROM GARAGE TO GLOBAL: DON'S MACHINE SHOP TAKES ON THE WORLD

DON'S MACHINE SHOP

WEST PITTSTON, PA

In 1981, Don Eifert set up a milling machine and a lathe in his one-car garage and opened up Don's Machine Shop. Holding his day job, he worked late nights taking cutting and fabrication jobs that no one else wanted. Over the years, Don's business grew steadily—thanks to his dedication to quality parts and timely delivery. He now services clients around the world in a wide variety of industries from his 77,000-square-foot, two-building shop—with help from more than 30 employees.

"Our shop is unique because we have both machine and fabrication facilities," says Don. "We can do just about anything for our customers and we're very conscious about continually updating our equipment and acquiring the latest technology."

Over the past three years, Don's shop has purchased a grand total of 12 MC Machinery machines, including EDMs, mills, lasers and waterjet machines, making it a unique and versatile shop.

MAKING THE CUT

Don's Machine Shop typically takes on smaller runs, ranging from one to 50 parts. Though the shop produces parts of all sizes, it specializes in heavy industrial components weighing as much as 15,000 lbs. Before purchasing his first Mitsubishi laser, however, Don was using another manufacturer's 4,000-watt laser, and struggling to cut the larger parts.

"We were having trouble cutting ½-inch metal," says Eifert. "There was too much vibration—we needed a machine that could handle the bigger parts and produce cleaner cuts."

In March of 2011, Don bought his first Mitsubishi laser, and everything changed. He was able to produce higher quality parts faster. The shop produces parts with a tolerance of ± .001 and spends less time and manpower doing so.

The biggest difference for Don is the Mitsubishi resonator. Don noticed the resonator on his old laser couldn't handle the bigger cuts on thicker components, and he was growing tired of replacing the resonator every few years. The Mitsubishi Laser, however, uses a patented resonator technology. The resonator delivers a unique rectangular high-peak pulse for the highest cutting power per watt. This makes for a sharper beam, cleaner parts and 90 percent lower gas consumption than competitive machines. Though most lasers require a resonator replacement every few years, Mitsubishi resonators are married to the machines for life. With more than 1,700 Mitsubishi lasers sold, not one has required a replacement—making Mitsubishi resonators the most reliable on the market.

HOLDING STEADY

"We pride ourselves on being a reliable shop," says Eifert. "We are able to compete in the global market because our customers put a premium on quality and precision. Our customers value us because we're reliable and it's thanks in part to a reliable machine supplier. That's what we've found in Mitsubishi Laser and MC Machinery as a whole."

"MC Machinery builds machines that are more reliable," says Eifert. "Since installing our second laser this year, we haven't experienced any problems. We've always had a great relationship with Mitsubishi's service team. They're very quick to respond to any questions of concerns. I will continue to purchase MC Machinery equipment before considering anything else."

ENCORE

TRADE IN, TRADE UP

Encore provides an easy and affordable way to upgrade to newer, more advanced laser technology by trading in your old machines. Pre-owned machines are reconditioned to factory specifications and come with our Certified Reconditioned-Machine Guarantee. All machines are backed by industry-leading installation service, operator training and customer support.

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HYDRAULIC SERIES

Ultra CNC hydraulic press brakes from Dener are designed for precision, speed and durability. The Elite Series machines offer an affordable and reliable press brake for years of solid performance. Finally, the Smart Series is ideal for small companies.

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Two new MC Press Brakes are leaner, greener and more reliable than ever delivering accuracy, quiet operation and faster cycle times to meet your demands.

HIGH QUALITY COMPONENTS, HOLD THE EXTRA STEPS

ACCROTOOL

NEW KENSINGTON, PA

According to Matt Guzzo, engineering manager at Accrotool, New Kensington, Pa., finding the right balance between speed and quality is the key to success in metal fabrication. As a one-stop job shop that specializes in a wide array of quick-turnaround sheet-metal work, done to exacting standards, the Accrotool team is constantly evaluating both their equipment and processes to strike that balance.

"We do a little bit of everything," says Guzzo. "We can do machining, paint, silkscreen, welding jobs and die work. For the most part, we're producing finished components for our customers."

Accrotool was co-founded in 1972 by Bill Phillips Sr., who remains active in the day-to-day operations – providing input based on his wealth of experience. For the past 40 years, the business has grown steadily and this past February, Accrotool acquired an 11,000-square-foot facility adjacent to its primary location.

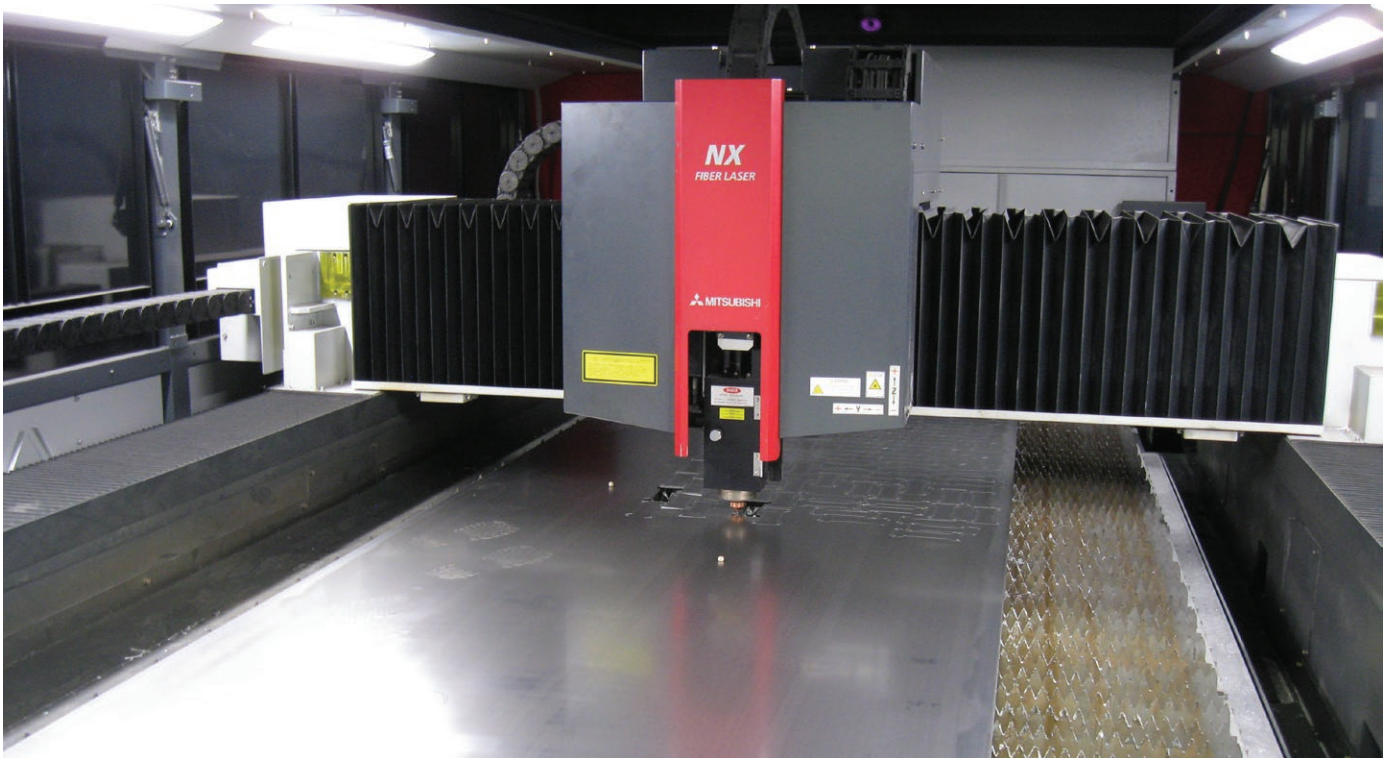
The newly acquired space allowed Accrotool to consider expanding its equipment, ultimately leading to the acquisition of a new fiber laser machine in April of this year. In selecting the new equipment, the company was looking to inject more speed into the operation without jeopardizing quality.

NEED FOR SPEED

Accrotool has been known for manufacturing quality parts since day one – in that sense, the quality of the end product hasn't changed over the years. What has changed is the pace at which they have been able to produce these components.

"We try to never send bad parts to clients," says Guzzo. "But up until recently, making quality parts required multiple operations. We had an older 1500 Watt laser, and parts coming directly off that laser weren't up to our clients' standards. So a secondary operation was required just to clean up the part."

"We needed to upgrade to a newer laser," he says. "We were creating quality parts, but at a glacial pace. We knew that the technology existed to do it faster." Guzzo immediately began the search for a new laser, and at FABTECH 2012, the Accrotool team found exactly what they were looking for.



FINDING THE ONE

At FABTECH, the team was immediately drawn to the MC Machinery booth. “MC Machinery was the only booth we saw with a live fiber laser demo, and it was packed,” says Guzzo. “It was the only booth where the representatives took the time to talk to us and answer our questions.”

Of course, Accrotool wasn’t ready to purchase any machine without seeing what it was churning out firsthand.

“The sample parts were incredible,” says Guzzo. “Not only was this NX-F fiber machine faster than our old laser, the quality of the parts was much better. As soon as I saw that fiber laser, I knew it was the machine we needed.”

“Once we realized the machine could make the parts we needed, it was a done deal,” says Guzzo. “Everything was perfect. The sales team was incredibly helpful, the customer service package was exactly what we wanted and, most importantly, the laser was easily the best on the market.”

CALLING IN THE PROS

Accrotool was pleased to find that the service package didn’t disappoint.

“We’ve been really impressed with service support on the Mitsubishi Laser,” says Guzzo. “Recently, for example, we experienced a brown out – all of the power went out, and the laser stopped running. We got Mitsubishi on the phone and representatives were here within two hours,” Guzzo says. “Mitsubishi has been quick to respond and solve any issues with our machine. It’s been very impressive.”

STRONGER, FASTER, BETTER

Since installing the laser, Accrotool has seen a big change in production.

“We’re producing parts at a much faster rate,” says Guzzo. “We’re able to take on an additional eight to 10 jobs per day now that we have the new laser.”

Most orders at Accrotool range from 50 to 250 pieces (larger orders are 300 to 500 parts and the smallest orders range from two to 50 parts). Guzzo noted that the quality of the parts is also much improved. The tolerance of the old laser was ± .012”. With the new laser, he’s seeing ±.002” or .003”. With the improved edge quality, Accrotool no longer needs to run secondary operations, improving throughput.

“When customers come into the shop, they are blown away,” says Guzzo. “They’re impressed by the quality of the parts and speed at which we can produce them.”

As customers get used to the increased productivity without loss of quality, they are beginning to request additional work from Accrotool. Because the shop has more capacity, it can take on more projects from current clients and broaden its offering for new projects. Accrotool is able to tackle jobs that would be impossible without the new laser.

“On the old laser, we couldn’t cut anything thicker than ¼”. Now, we can cut steel up to ¾” thick,” says Guzzo. “We can accept jobs that fall outside of our niche.”

PARTNERS FOR LIFE

Accrotool has been so impressed with the service provided on the Mitsubishi Laser that when they needed to replace an aging Press Brake, Mitsubishi was given the opportunity to fulfill that need.

Accrotool hopes to continue to build on their strong relationship with Mitsubishi and MC Machinery.

EMBRACING LASER TECHNOLOGY

ARTISAN INDUSTRIES INC.

STREETSBORO, OH

Artisan Industries Inc. began as a metal former in Streetsboro, Ohio, but like other stamping houses, recognized the need for diversification. Since jumping into the fabricating business, the company has been constantly evolving to become a one-stop shop for customers.

"Our strategy is to listen to our customers," Berkes says. "We need to be able to support and grow with them." It sounds like a simple strategy, but execution requires faith in the customer's business plan and the financial wherewithal to invest in manufacturing technology and talent. "It hasn't always been smooth sailing," says Berke. "We reached peak revenue earnings ($30 million) in the late 2000s with defense-related work, then diversified the company business after the reduction in military jobs. We added a third manufacturing location in Florida and grew our workforce to about 100 employees. But our commitment to our customer remained strong and served us well." Listen to the story.

Berkes went to work for his father, Jim Berkes in 1993 as a plant manager of a 15,000-square-foot facility in the Cleveland area making retractable cargo restraint systems. Jim Berkes, who also was running his own stamping operation, Artisan Tool and Die, developed the restraint system to cut down the waste associated with shipping. The cargo restraint system, still made by Artisan today, can be used repeatedly, unlike boxes or shrink wrap.

Unlike other stampers, Artisan Tool and Die didn't bang out thousands of washers a day. The company concentrated on the tougher jobs—such as deep drawing—that the larger houses showed no interest in doing. The shop employed 10 journeyman toolmakers and supplemented the ranks with an apprenticeship program. It was a problem solver.

Jeff Berkes also liked to solve problems, which led him to explore the latest CNC technology. Berkes saw laser cutting technology as a game-changer. Traditionally, new projects required tooling, failure mode analysis, production of samples, prototype tweaking and ultimately, the production of parts six months later. The laser cutting method required a CAD file—translated into an NC program—to cut the part, taking a matter of minutes with production and delivery of parts soon thereafter. "We needed a laser," says Berkes.

Berkes reached out to nearby shops to ask their opinion and was invited into the shops. In both shops he saw Mitsubishi laser cutting equipment. Shortly thereafter, he headed to the Mitsubishi showroom in Chicago and enrolled in Laser Cutting 101. "I was fired up about being exposed to CNC technology," he says. The company purchased the first of what would eventually be a dozen laser cutting machines from Mitsubishi.

In 1998, the Berkes family and another partner left the company to form Artisan Industries. Artisan purchased new Mitsubishi laser cutting equipment and began competing with the company it left behind. It not only had the restraining belt product line, but a large customer that stayed with them as they formed the new business.

A Tier 1 supplier to Caterpillar approached Artisan management to gauge its interest in laser cutting engine gaskets. After accepting the job, Artisan became one of the first area fabricators to laser-cut these types of parts. The engine gasket blanks were cut on the lasers and the blanks were fed to the stamping presses to complete high-tolerance secondary operations. The investment in laser cutting technology paid for itself right from the start.

Today, Artisan Industries has two 4.5-kW eX CO2 cutting machines attached to a 16-shelf raw material storage tower, with room to add another CO2 or fiber laser. A stand-alone 6-kW NX laser cutting machine is located strategically in the 75,000-square-foot facility so more equipment can be added when the business grows. The shop has another automated setup with a tower that feeds two 3.5-kW LV series lasers.

For Artisan, the laser cutting business grew over the years with the addition of automated storage and retrieval towers and modern equipment. In the late 2000s, metal fabricators across the U.S. were cutting armor plate for U.S. military vehicles and Artisan was invited to contribute to the cause after a local fabricator went out of business. The armored vehicle manufacturer looked to Artisan to step in and fill the gap. It absorbed the closed fabricator's business, several employees and 65,000-square-foot facility.

"We were pumping armor for a couple of years," Berkes says. "We were only able to do that because the customer had confidence and we had capacity and financial wherewithal to secure the materials and deliver the products." In 2008-2010, Artisan posted record revenues. During that time, Artisan had a chance to perfect the process of cutting thick materials. Today, a majority of the metal thicknesses processed at the Streetsboro facility are 0.25-inch to 1-inch thick.

The defense business posed a potential risk, however, because it represented 85 percent of Artisan's business. Berkes didn't want to be too closely linked with one company or industrial segment because any downturn could be damaging. So Artisan diversified their customer base to counterbalance the defense work. Today, defense represents only 5 percent of the fabricator's overall business.

Around that time, a longtime customer wanted Artisan to become a more valuable contributor to its supply chain. The catch was that Artisan would have to do so from Florida, near the customer's headquarters. So, the metal fabricator opened a Florida facility. It is now the largest sheet metal supplier to the customer, delivering finished metal cabinets daily. With that relationship established, Berkes says the 35,000-square-foot shop is working to diversify its customer base.

Entering new industry segments, adding technology and a new facility and evolving from a parts supplier to a component builder all put stress on an organization. Artisan was no different.

As the metal fabricator grew over the years, the pace and variability of manufacturing increased. "Drop-in" is no longer a term used to describe an order that disrupts the production schedule; it's the nature of business. Customers don't want to carry inventory, so they expect Artisan to supply parts at a moment's notice.

"We're successful because of our transaction speed," says Berkes. "Once, a customer showed up in a full-sized van filled with raw material and said he needed 50 widgets by the next day. We said ok. Now everyone wants that level of service."

To take care of these unscheduled jobs, Artisan reserves "ghost hours" for equipment. This open capacity gives Artisan the chance to accept "hot" work that otherwise wouldn't be accommodated and customers can change or add production requests.

Berkes is confident that Artisan's technology allows the company to compete with other shops. With offline programming, it can turn drawings into parts in a matter of minutes—even with production in full swing. It has equipment that runs much more efficiently; for example, the eX laser cutting machines have faster cutting heads and can change gases 60 percent faster than older-generation machines.

Artisan is constantly evolving and customers want the shop to grow with them, which is perhaps the greatest sign of faith in a supply chain partner. Customers don't want to have multiple vendors. They want completed components delivered to them. So in two years, Artisan will have a powder coating line installed to deliver finished metal parts to customers.

Artisan is also exploring options for an enterprise resource planning software upgrade that will give it the ability to support the volume increases and quality expectations that come with growing the business. "The challenge is to never be complacent. We need to continue growing if we want to be in a similar position in 15 years," Berkes says.

Twenty years ago, a company was formed to produce a cargo restraining belt that could eliminate waste associated with traditional approaches to shipping parts. In 2013 Artisan is still focused on eliminating waste and it's more than willing to listen to its customers for ideas. After all, those relationships are responsible for the company's success.

Article adapted and reprinted from The Fabricator July 2013.

STARTUP SUCCESS

ACP WATERJET

WOBURN, MA

Starting a job shop—particularly with no experience—is no easy feat. But with a little help from the right partners, success is within reach. Carlos Fernandes knows this firsthand, and he found his success with an old friend and a new supplier.

His career in high-end remodeling took a twist in 2008 when longtime friend Alex returned from Eastec with an idea: to start a waterjet shop.

"At the show, he saw a Mitsubishi waterjet machine. He was in manufacturing and had used Flow machines and had looked into OMAX and others. But he liked what he saw in Mitsubishi," Fernandes says. "So we called them, went to Rochester, New York to see the machine and it all began from there."

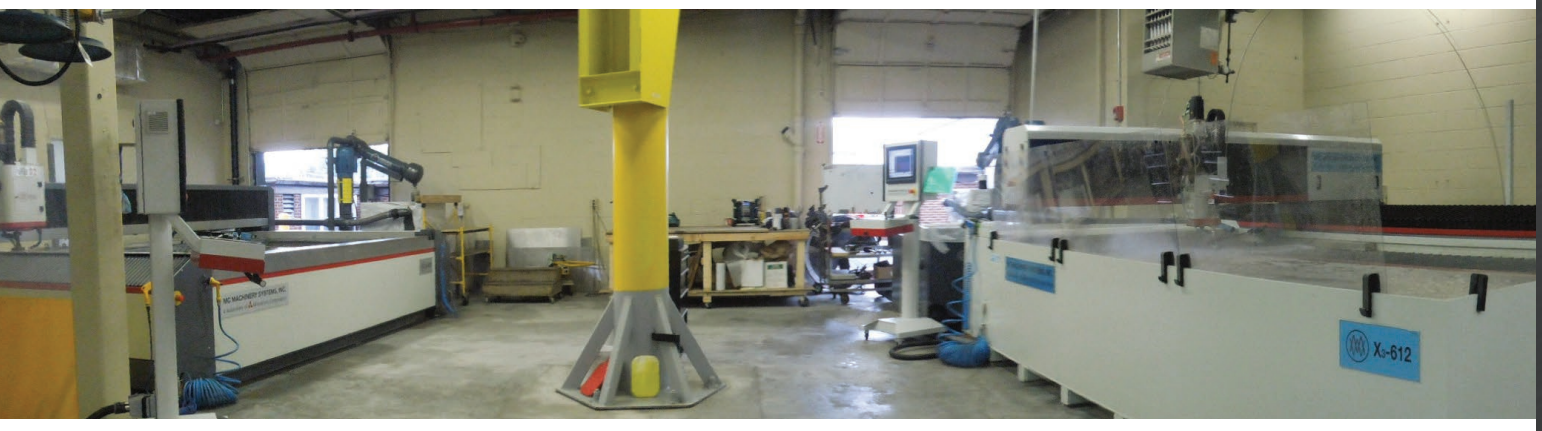
At the time, Fernandes knew nothing about waterjet machining, but was impressed with MC Machinery as an organization. He and Alex returned home from their trip with the bill of sale for a new DX3000 waterjet.

ACP Waterjet (formally ACP Machine Shop) opened in January 2009—starting from scratch without a single customer. The partners hit the ground running—mailing and visiting potential customers, creating a website and running Google AdWords campaigns—all while continuing to work their fulltime day jobs.

"When we started getting customers, we would go to the shop after work—working from 4 p.m. to whenever we were done, plus weekends," Fernandes says. "It was rough—we had to crawl before we could walk, with a few customers here and there."

During these tough times, support was crucial and Mitsubishi answered the call—literally.

"We would call the private cell phones of our reps—who would answer on weekends. Because that was the main time we were working in the beginning, it was our only



option," says Fernandes. "And they would always answer and solve the problem over the weekend. They made the best efforts toward maximum uptime—and I don't think I ever had to go more than a day to get parts to get the machine back on track."

By 2010, business had doubled and moonlighting was no longer an option. Fernandes bought out his partner, quit his job and began working fulltime at ACP.

"I had to make it work," says Fernandes, who had a newborn at the time. "There was no other option, no looking back."

Fortunately, ACP was still growing at a steady clip by 2011—about 50 to 60 percent year over year.

"My goal became, and still is, to try and get the shortest lead times possible—one to three days depending on the job," Fernandes says. "Quoting is something I am still really crazy about because I want to give customers a quote within a few hours and not a few days. That way, we can get the order processed as quickly as possible."

Speed isn't the only thing that Fernandes is passionate about.

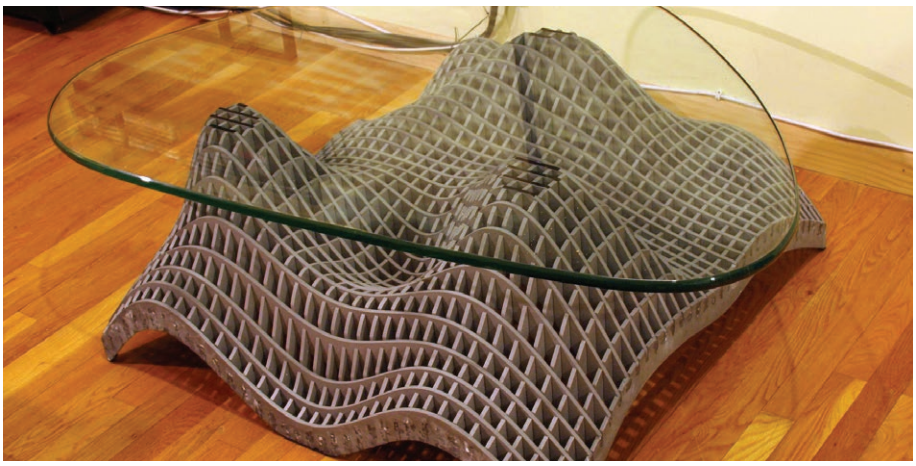
"We want to be fast while maintaining a high standard of quality," he says. "We have very, very, very few parts returned to us. And even when they are, these customers stay with us because we are able to provide them a solution to the issues."

By 2012, business had grown to the point that Fernandes was working up to 14 hours a day nearly every day.

"We decided we needed to hire another employee and get another machine," says Fernandes. "We decided on the MWX4 at the end of 2012."

If getting the new machine seemed easy, that's because it was—thanks to MAC Funding, the financing arm of MC Machinery.

"Without MAC funding there would be no ACP Waterjet, because no one would have financed us for a second machine," Fernandes says. "We were doing very well, but we were still a startup. Without MC Machinery, we'd still be on the first machine and working 18 hour days—and still not getting all the work done."



With support from MC Machinery, the company continues to grow—with no signs of slowing. This year, Fernandes replaced his DX with an MWX3 and the shop expanded from 2,000 square feet to 6,000 square feet. Fernandes is seriously considering a press brake from MC Machinery, in addition to more waterjet machines, as business continues to grow. For now, he's "very happy" with the ones he has.

"The MWX4 is very nice, super accurate—within one one-thousandth of an inch, something the DX couldn't do," he says. "It's easy to get a good part from the start and you can update your database for future repeat orders and it's right there."

Fernandes also enjoys the speed, table control and drive system. The compact footprint doesn't hurt, either. And even though he's only had it a short time, the MWX3 is quickly becoming a shop favorite.

"The MWX3 is great so far—we are in love with it because it is such a simple and good machine," Fernandes says. "When you really need the accuracy for thicker materials, the MWX4 is unbeatable. But for less demanding jobs, the MWX3 is ideal."

When he does decide to expand into other types of cutting and fabrication technologies, Fernandes has no doubts about the partner he'll choose.

"Other waterjet companies only offer waterjet. A big benefit with MC Machinery is that you call one place and get everything," he says. "It definitely helps having one partner to deal with if we choose to try other technology, because we know support is there. We've seen firsthand that there's a lot of people behind that one phone call—it really exists."

TECH TIP

AUTOMATION CONSIDERATIONS

By Mike Monaghan, automation product manager

Thinking of taking the leap in productivity from stand alone machines to automated systems? There are a few things you need to keep in mind as you strategize how best to move forward.

The first thing I discuss with operators is flow. I want to figure out where the raw materials are coming in, where they are stored, and where they are going once they come off the machine. In a lot of situations, the material flow through the facility determines where and how the laser will be set up.

Once the flow is identified and an efficient plan is in place, we begin to assess the materials themselves. The materials that can be cut will be dictated by the laser, but you have to make a library of the different materials and blank sizes that you're running, and input that into the software. Maybe it's not the first thing you do, but it has to be in the back your mind.

Installation parameters constitute the real meat and potatoes of automating any facility – there are a lot of details to consider. Luckily, Mitsubishi Laser details everything you can expect in a pre-installation book, and I will personally attend most installation planning. I prefer to meet face to face with a contractor to ensure nothing is lost in translation. We cover everything down to utilities, including air and power. You might not think of it, but it takes a lot of air – in the form of vacuum pressure – to move, lift and drop metal workpieces. And you have to remember – towers are tall. Considerations include heat sources that you need to avoid, and HVAC in general, not to mention sprinkler systems and gas lines. There are a lot of considerations when automating, but there's nothing we haven't thought of or experienced already.

CONSUMABLE PRODUCTS GROUP

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LOW-ABSORPTION LENSES

As energy passes through a laser's focusing lens, a percentage of that energy is absorbed into the lens substrate. Thanks to a special coating, low-absorption lenses absorb only half of the energy a standard lens absorbs. The maximum absorption rate for a standard lens is less than 0.2 percent, while a low-absorption lens absorbs less than 0.15 percent. As a result, low-absorption lenses are less affected by thermal distortion, hence exhibiting higher focus stability.

Also, low-absorption coatings are easier to clean due to a tough top layer. The reduced absorption rate slows the rate of thermal breakdown, which can more than double the lens life.

KEEP IT CLEAN

Cleaning your optics is a critical factor in keeping your machine operating at peak efficiency. Our lens cleaning kit (CPGKITLS-1) contains Bell clean wipes, lens cleaning fluid (denatured alcohol), 100 percent-cotton swabs and lens cleaning paper.

Take advantage of the full spectrum of what CPG can do for you: from supply to technical advice and guidance directly from the OEM. For more information on low-absorption lenses or any of your consumable needs, contact a CPG specialist today: 888-297-9895 or cpg@mcmachinery.com.

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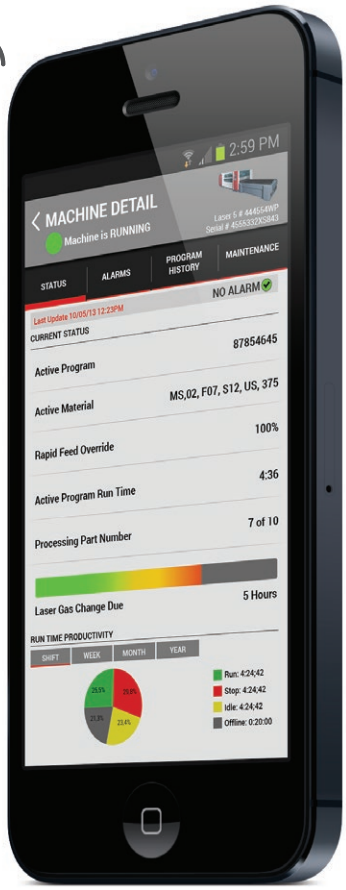

Plan, prevent, protect

Don't wait for costly repairs and unnecessary machine downtime—take advantage of preventative maintenance plans to keep your equipment operating at peak performance.

Maintenance offers a bigger advantage than you think:

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- Reduced unplanned downtime
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FINANCING MADE SIMPLE

Whether a small startup, or a corporate expansion, MAC Funding can provide the flexible financing needed to grow your business. As the financing arm for MC Machinery Systems, our goal is to deliver the support you need.

- Flexible payments
- Simplified loan structure
- Competitive rates
- Speedy review and approval

> Without MAC Funding, there would be no ACP Waterjet; no one would have financed a second machine.
>
> **– ACP Waterjet Owner, Carlos Fernandes.**

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AS I SEE IT

A LETTER FROM BILL ISAAC

VP OF SALES AND MARKETING, MITSUBISHI LASER / PRESS BRAKE

DEAR FABRICATORS,

In the last two years we have seen a significant shift in fabrication equipment, led by the surge in fiber technology. You will notice numerous suppliers at this year's show displaying fiber technology – in fact, the number of fiber manufacturers far outnumbers the count of CO2 manufacturers. This evolution in technology has forced us and all other large laser manufacturers to take notice and change our approach to the market, requiring that we understand the benefits of both technologies.

At Mitsubishi we truly believe we have the best, most cost-effective CO2 lasers on the market. Our patented cross-flow resonator technology is supremely unique. We consume up to 90 percent less laser gas than our competitors - dramatically reducing your hourly running costs.

Conversely, fiber technology is all about SPEED. It excels in thin material and in production environments. And still, fiber's capabilities continue to grow. At Mitsubishi, we are in the forefront of those developments. As machines with higher wattage become available, we are learning what that means in terms of increased speeds and thickness capabilities.

The one common link in all of this is maximizing your productivity, and that is achieved through automation. In our booth you will see automation on fiber and CO2 lasers. You will see how automation can truly bring your shop to new levels and put your production into a place you never imagined. Whether it's fiber or CO2, stand alone or automation, Mitsubishi Laser has the products that can help you increase production and sharpen your operation costs at the same time.

Bill Isaac