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Connecting with Our Customers

Proven Solutions at Our Tech Centers and International Trade Fairs

By Ezio Basso, Prima Industrie Managing Director, Prima Power Division



Throughout 2016, the number of customers, partners, and stakeholders that have visited our Tech Centers and our booths at numerous exhibitions throughout the world has been truly impressive.



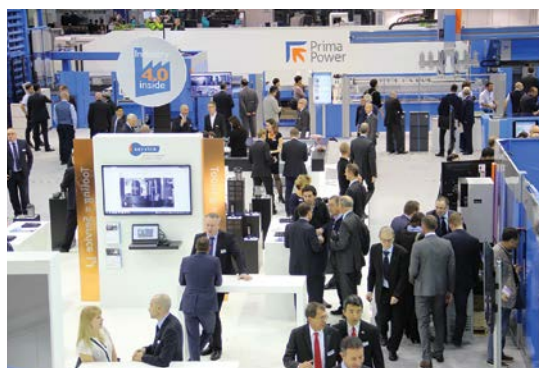
The new Prima Power Tech Center has welcomed over 2,000 visitors representing 350 companies from 40 countries since opening last May.



Since our new Tech Center was opened last May in Collegno (TO, Italy), we have welcomed over 2,000 visitors representing 350 companies from 40 countries. This included personal demonstrations for 100

customers, as well as 20 events organized for large international customer groups. It has been a continual and increasing activity for our global technological hub, and many additional visits are scheduled for the upcoming months.

Our promotional endeavors of our enhanced product lines culminated with the highly successful participation in three major international trade fairs on three different continents: EuroBLECH in Hannover, FABTECH in Las Vegas, and MWCS in Shanghai.

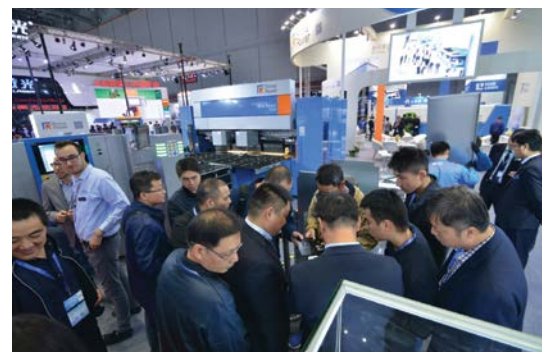


The Prima Power products displayed at EuroBLECH attracted great interest each day of the exhibition.

At EuroBLECH, the world's largest sheet metal working show, the Prima Power presence was a dramatic stand of 1,500 sqm, that was continually full of fascinated and interested current and prospective customers. All showcased products attracted great interest and particular attention was given to our new in-house fiber laser, now available on the entire range of laser machines. All products were "Industry 4.0 Inside", fully connected with our solutions for smart manufacturing.

The trade fairs in Shanghai and Las Vegas were also a huge success for Prima Power. Metalworking and CNC Machine Tool Show (MWCS) is the most influential international metalworking show in the Asian-Pacific region, and we exhibited some of the technologies we manufacture locally in our Suzhou plant. FABTECH is North America's largest trade show with collaboration of technology,

equipment and knowledge in the metal forming, fabricating, welding, and finishing industries.



Metalworking and CNC Machine Tool Show (MWCS) is the most influential international metalworking show in the Asian-Pacific region. Prima Power exhibited some of the technologies the company manufactures locally in its Suzhou plant.

This year, FABTECH welcomed 1,500 exhibiting companies and a total of 31,110 attendees from over 120 countries to the Las Vegas Convention Center. Prima Power displayed the Laser Genius, the new BCe4 Smart Bender, and the servo-electric eP Press Brake.



At FABTECH, Prima Power displayed the Laser Genius, the new BCe4 Smart Bender, and the servo-electric eP Press Brake.

An important focus during these events was Industry 4.0. With our extensive experience in complex manufacturing systems, connectivity between different systems and the customer's factory has always been a key factor for our products, and continues to be an innovation drive for us. In our new Tech Center, an area dedicated to Industry 4.0 is available for real-time demonstrations of our Digital Manufacturing & Service Solutions.

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Fiber Laser & FastBend Spark Product Redesign Savings

Richards-Wilcox Inc., Aurora, IL, traces its history to 1880, and is one of the longest continuously-operated factories in the Chicago area. The company began in business as a manufacturer of hinges and flat track sliding door hardware systems for stables, barns, and garages.

Today, Richards-Wilcox Holdings, Inc. is a privately-held company still specializing in overhead conveyors, door hardware products, and office filing and storage systems, with each product line branded under either Aurora Storage Products, Inc. or Richards-Wilcox, Inc.

The company's 300,000-square-foot facility in Aurora, IL, still located on the original site, is where the company manufactures and distributes product throughout the US, Canada, Mexico, and Europe. Several years ago, Richards-Wilcox purchased a museum-grade storage



(From left to right) Eric Gramly, Dan Santoro, and Tom Glennon were part of the management staff challenged to upgrade their company's older punching and bending machines with new technology. Their choice was the Prima Power Platino Fiber Laser and the FastBend panel bender.

"We were able to purchase the new Prima Power equipment based on the new museum product line," continues Glennon. "We were at a point where we needed to upgrade the facility, and the equipment that Prima Power was offering opened up a lot of new opportunities for us to make parts using less steel, less time, and with better construction."

Prima Power Platino® Fiber Laser

The Platino Fiber Laser cutting machine is the perfect balance of innovation and experience. This product combines efficient and ecological fiber laser technology with

the proven reliability and flexibility of the Platino platform. It is the right choice for sheet metal manufacturers looking for a production tool which is:

- efficient, granting energy and maintenance savings
- productive, particularly on thin and medium-gauge sheets
- flexible, suitable for a wide range of materials, including highly-reflective metals
- reliable and capable of meeting any production need, with a variety of automation modules
- user-friendly, easy to install, use, and maintain

"We went from 2-4 weeks lead times to a 1 or 2 day turnaround. Within 30 minutes we could have emergency parts off the Platino Fiber Laser instead of waiting three days."

The Platino Fiber Laser can be used to cut a wide range of materials. Fiber lasers are more effective than other laser sources for cutting highly-reflective materials (e.g. aluminum alloys, copper, brass). The Platino Fiber cuts various thicknesses, up to 20 mm of mild steel, with efficiency and quality. Productivity increases particularly with thin and medium-gauge sheet metal.

Laser Savings

The addition of the Platino Fiber Laser allowed Richards-Wilcox to save the \$300,000 it was spending on outsourced laser parts. "We went from 2-4 weeks lead times to a one or two day turnaround," says Glennon. "Within 30 minutes we could have emergency parts off the Platino Fiber Laser instead of waiting three days. We have actually offloaded some of our other machines because of the capabilities of the laser. This has allowed the older machines to increase their reliability and productivity. The Platino Fiber Laser runs two shifts per day. We've been getting 12-14 hours/day out of the laser for the past two months."



The Platino Fiber cuts various thicknesses, up to 20 mm of mild steel, with efficiency and quality. Productivity increases particularly with thin and medium-gauge sheet metal.

cabinet line, which represented a new and promising market for the company. The requirements and tolerances of this new line were more extensive than the company's previous shelving units. "Our challenge was to upgrade and replace our older punching and bending machine with new technology that would allow us to compete in this new market," explains Tom Glennon, engineering manager. "Another need was laser cutting capacity. We were outsourcing nearly \$300,000 for laser blanks each year."

Prima Power Solutions

After a very thorough search of fabrication equipment from various builders, the management of Richards-Wilcox decided to purchase the Prima Power 4 kW Platino Fiber Laser, installed in July 2015, and the FastBend panel bender, which was installed in November 2015.

Continued on page 4

Fiber Laser & FastBend Spark Product Redesign Savings

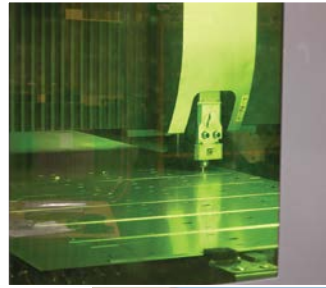
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Quality of Cut

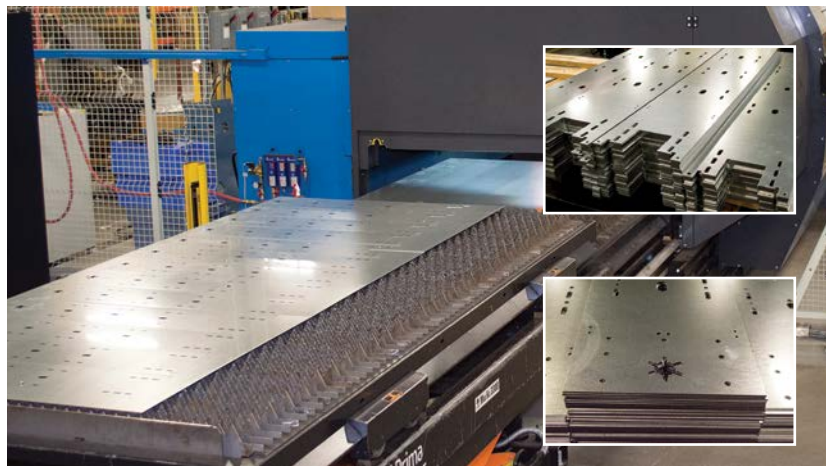
"When you shear or punch a blank, you have to make sure that the tooling stays sharp or the subsequent operations are more difficult," continues Glennon. "By having the clean edges and the consistency of the laser, we can run quicker, with less setup time, less part to part deviations, while making the processes downstream better and quicker."

Prototypes

"Another benefit of the Platino Fiber Laser is that we have gone from weeks to a couple of days to create prototypes," says Glennon. "This has allowed us to truly begin to work as a product development group. We do a great deal of custom work for our customers. One of our company's strengths is that if our customer needs a large order of standard product and a few custom parts to make it all fit together, we are very accommodating. Now that we have the fiber laser, we are able to test all those custom parts, get them assembled, tested, and proven before we ship them to the customer."



The Platino Fiber Laser cutting machine is the perfect balance of innovation and experience. This product combines efficient and ecological fiber laser technology with the proven reliability and flexibility of the Platino platform.



The addition of the Platino Fiber Laser allowed Richards-Wilcox to save the \$300,000 it was spending on outsourced laser parts. The company went from 2-4 weeks lead times to a one or two day turnaround and offloaded some of its other machines because of the capabilities of the laser.

Local Service

According to Eric Gramly, systems engineer, having local access to Prima Power service was another important factor. "We've had numerous service issues with other machine builders in finding service techs to arrive at our facility in a timely manner," explains Gramly. "Prompt service is very important to us. We like that warm & fuzzy feeling of having service techs just an hour away. In addition, there are a lot of companies that build lasers, but just a few that also build panel benders. We wanted to stay in the same family of machines for our new machines."

FastBend

The Prima Power FastBend panel bender was installed in November 2015. The FastBend is part of the Prima Power servo-electric bender family. While technically part of the bender product line, the FastBend fulfills many of the needs of today's fabricators regarding the press brake operation.

The FastBend provides a solution to the labor-intensive tool setup, programming, and part handling involved in forming metal in a traditional press brake. It reduces or eliminates non-value added costs associated with the traditional press brake operation. The FastBend also provides additional flexibility with the capability to form different angles, hems, multiple corner radii, "z" offsets, and closed tubular profiles with the standard set of tooling. The Automatic Tool Change (ATC) option, automatic feed table, and automatic inversion of positive and negative bending blades allow for more bends per side in an automatic sequence without manual intervention. The FastBend operator is simply required to load, rotate, and unload the part.

Part setups as fast as 10 seconds can be achieved when using ATC in conjunction with the optional bar code reader and operator instruction display screen. The FastBend operator can initiate a part program by simply scanning the bar code on the part. The instruction screen will notify the operator when the tool setup is complete, and graphically display how the part blank is to be loaded. The result is quality, speed, and elimination of mistakes.

"We were able to reduce the cost of the cabinet by 60% with the purchase of the two Prima Power machines which allowed us to laser cut our own blanks, eliminate welding, and dramatically reduce secondary operations because of the quality we were getting off the laser and bender."

New Design Flexibility

Soon after the FastBend was installed, the engineering department took on the task of designing the museum cabinet. The goal was to achieve a snap-on design that would virtually eliminate welding. According to Glennon, the main target of the redesign was to reduce the cost. "We knew the importance of the new museum product line, but we needed to redesign in order to compete in the marketplace."



The FastBend allowed Richards-Wilcox to eliminate welding the box by having the pieces snap together. The company was able to redesign the box due to the machine's repeatability.



The Prima Power FastBend panel bender was installed in November 2015. While technically part of the bender product line, the FastBend fulfills many of the needs of today's fabricators regarding the press brake operation.

What features of the FastBend allowed Richards-Wilcox to redesign this product? "The flexibility of the ASB (additional short blades) tooling was a key feature," explains Dan Santoro, industrial engineer. "We were able to redesign features around that...and of course the repeatability of the machine. Before the FastBend, we really weren't able to do any interesting or unique features because they wouldn't necessarily come out the same way twice."

dramatically reduce secondary operations because of the quality we were getting off the laser and bender."

"The FastBend allowed us to eliminate welding the box by having the pieces snap together. We were able to design it because of that repeatability."



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Flexible Manufacturing Cell

"We have been able to use these two machines as a flexible manufacturing cell," says Glennon. "There is next to no setup time and infinite possibilities for lighter gauge material. The Platino Fiber Laser and FastBend have allowed us to adequately supply a high-mix, low-volume product to our various markets in a timely and cost-effective manner. We have been able to keep our costs down and provide custom pieces for our customers to keep them happy."

"The Platino Fiber Laser and FastBend have allowed us to adequately supply a high-mix, low-volume product to our various markets in a timely and cost-effective manner."

From Design to Finished Products

"From design to finished products," concludes Gramly, "the Prima Power machines have opened new market doors and have allowed us to manufacture in a more modern way. The turnaround time is within a week or less. We can go from prototype to a finished product in no time. We don't have to wait a week to get a part from the outside—now we can get a part within an hour. We are manufacturing much faster now than we ever have. These are the right machines for the right team of people."

"With the other equipment we just couldn't get the repeatability that would allow us to snap or lock pieces of metal together," adds Gramly. "It would work great one time and not the next time. The FastBend allowed us to eliminate welding the box by having the pieces snap together. We were able to design it because of that repeatability. One of the biggest costs we eliminated with the FastBend was setup time with the museum cabinet. We were able to reduce the cost of the cabinet by 60% with the purchase of the two Prima Power machines which allowed us to laser cut our own blanks, eliminate welding, and

Prima Power at EuroBLECH 2016

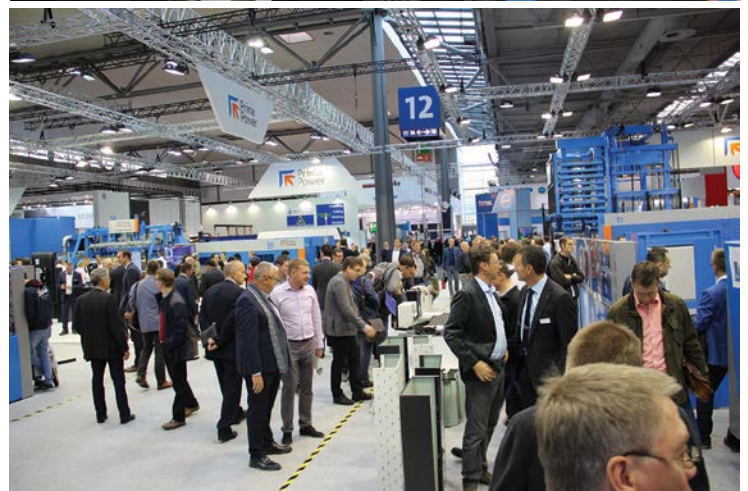
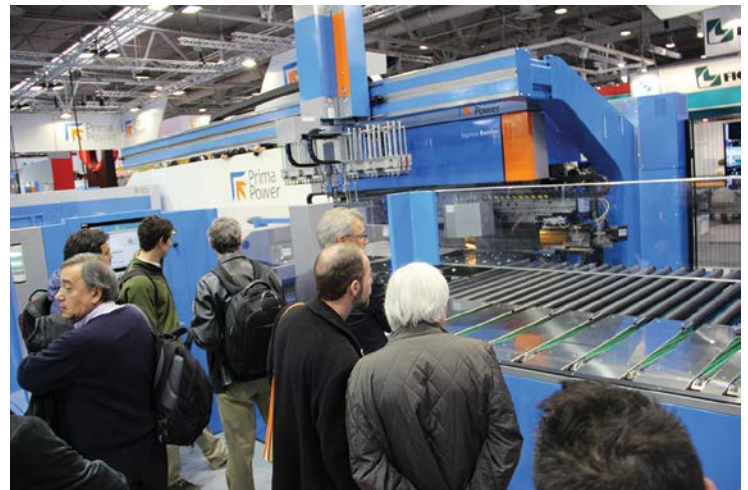
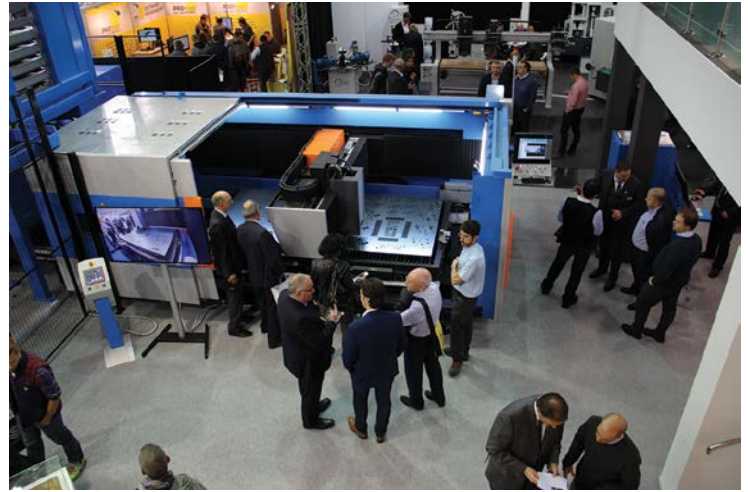
Technological Breakthroughs, Smart Solutions for Industry 4.0, and its Own New Fiber Source

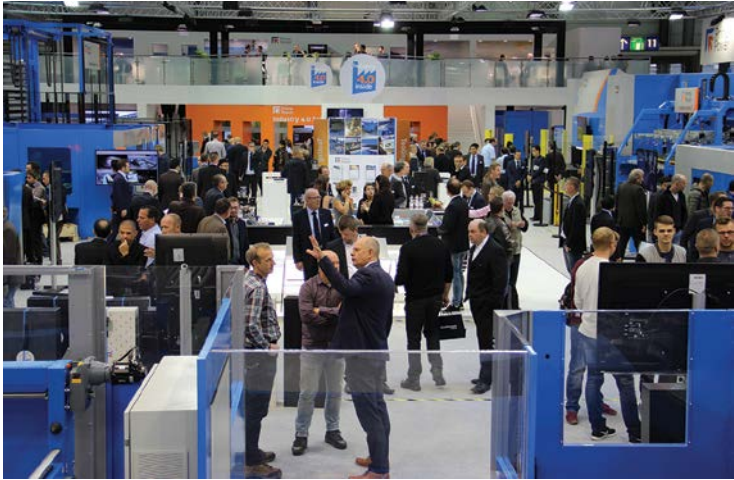
EuroBLECH 2016 was a success for Prima Power, which exhibited its comprehensive and innovative range of sheet metal working machines with several new important benefits for its customers.

Prima Power showcased the enhanced Laser Genius with the new Combo Tower; the revamped Platino Fiber; the new Laser Next 2130 with increased work volume, the Combi Genius 1530 Dynamic version for punching/laser cutting complemented with Compact Express automation, the PSBB manufacturing line with many improvements raising manufacturing speed and productivity to a new level, advanced solutions for productive and flexible servo-electric bending BCe Smart and eP 1030, and smart software suites for top efficiency and productivity.

The new brand *Industry 4.0 Inside* was shown on all exhibited machines, ready for the smart manufacturing era. It was well demonstrated in the Industry 4.0 Solution Center, a large area of the stand dedicated to demonstrations of Prima Power solutions for smart manufacturing and service (see pages 16 & 17).

Great interest was also generated by the new CF series fiber laser by Prima Power, already equipping 3D laser and Combi, now also available for the full laser range, including 2D cutting machines. Prima Power is the only laser machine manufacturer to internally develop all essential elements of its products, an important plus for Prima Power customers who can count on a single-source supplier to provide maintenance and assistance on all system components.





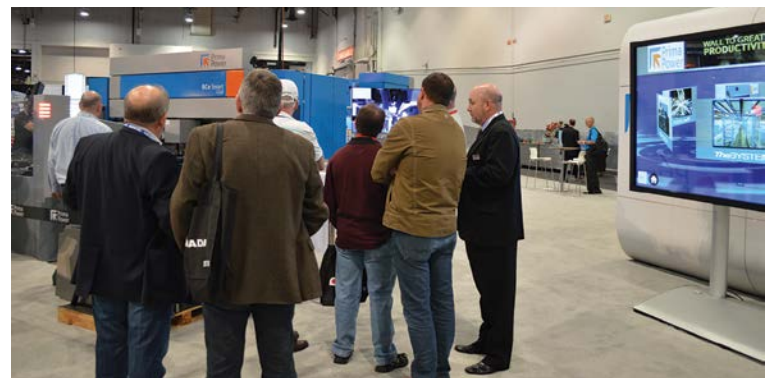
FABTECH 2016

A Real Winner in Las Vegas!

FABTECH 2016 is North America's largest collaboration of technology, equipment and knowledge in the metal forming, fabricating, welding and finishing industries. This year FABTECH welcomed 1,500 exhibiting companies and a total of 31,110 attendees from over 120 countries to the Las Vegas Convention Center.

Prima Power was a main attraction at the 2016 FABTECH Show. The Laser Genius was on display with the latest fiber technology and its unparalleled speed. One of the star attractions of the entire show was the new BCe4 Smart Bender. Its combination of capabilities, speed, precision, and automated bending at an affordable price made this a very appealing machine to those attending this year's show. Rounding out the machines on display was the always popular Prima Power Servo Electric eP Press Brake.

According to Mike Stock, vice president, sales, one of the biggest challenges for Prima Power at trade shows is how to show our vast product line and our modular approach to system automation to visitors. "It gave me great satisfaction to see how well *The Prima Power WALL* was received. This fully-interactive, oversized touch screen enabled the salesmen to showcase the entire Prima Power product line to our customers and visitors within the limited booth space. The WALL was in constant use and did an excellent job of showing them the solutions available to meet their needs. It was almost as good as being next to the actual equipment being presented."



Prima Power *WALL to Greater Productivity*

The Prima Power touch screen interactive video wall is known as the Wall to Greater Productivity. This 98" touch screen provided access to the wide range of Prima Power technology, machines, and systems that provide greater productivity in sheet metal fabrication.

Solutions to production can be easily and quickly realized by selecting a group of products, then narrowing your search to a specific product or system showing more detailed information and, at your touch, a video to see the machine or system in action.

Creativity, Animation, Graphics, Videos, Interactivity, and Touch Screen Technology are all helpful tools to inform and attract visitors to our FABTECH booth, but we were able to offer even more.

Interactivity and touch screen technology enabled our visitors to learn more about solutions to their specific production needs by having visual access to our entire product line while navigating directly to the machines or systems that meet their requirements.



Prima Power China Shines During MWCS 2016

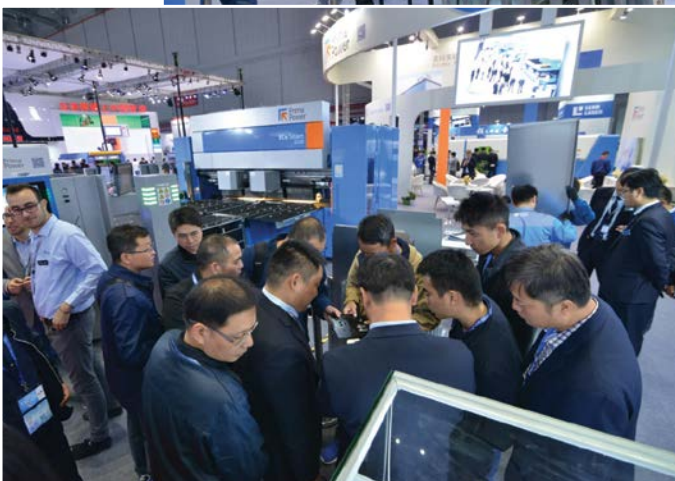
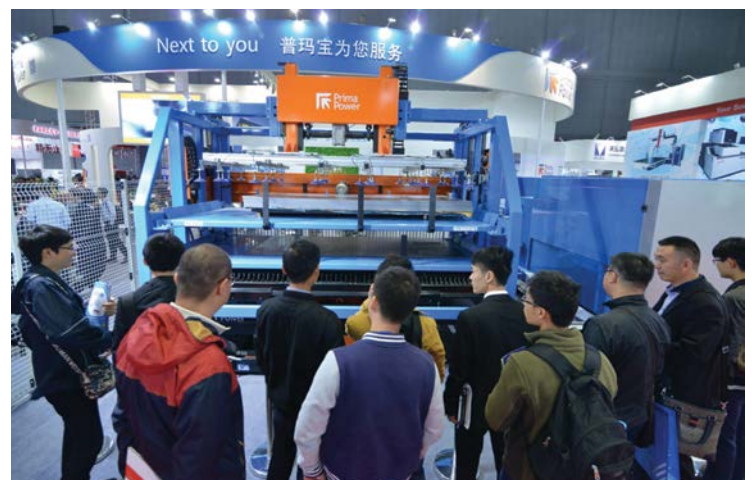
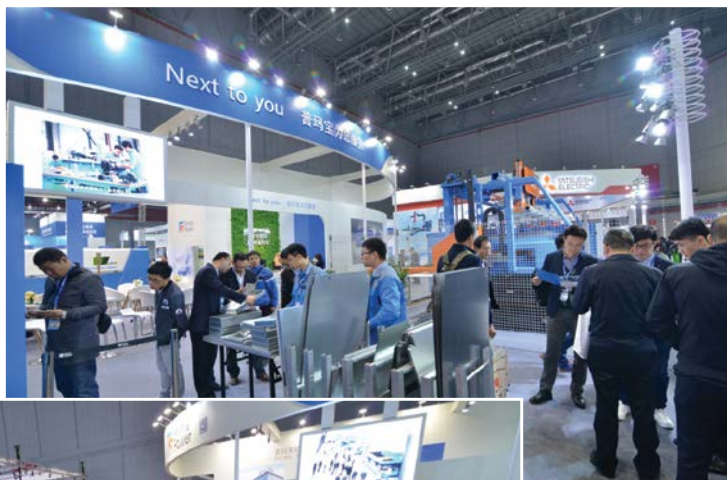
Prima Power China successfully participated in the 18th China International Industry Fair held at the National Exhibition and Convention Center in Shanghai on November 1-5. Under the unifying theme of *Strong Manufacturing with Intelligence First*, the Metalworking and CNC Machine Tool Show (MWCS) is the most influential international metalworking show in the Asian-Pacific region, attracting over 600 exhibitors within a display area of 70,000 sqm, and with leading enterprises from 11 countries.

There was great visitor interest throughout the week in the machines showcased at the Prima Power booth, which was centrally located in the main exhibition hall. Attracting a great deal of attention was the new BCe Smart 2220 panel bender. Ease of use, flexibility, active safety, and low energy consumption are the main features that attracted visitor interest. "BCe Smart is able to reduce the energy consumption by more than 30% compared to local machines, which is a key improvement for our Chinese customers who deal with power supply restrictions," explains Flavio Gregori, Prima Power China president and Prima Group executive vice president.



Also turning many heads was the 2D, 3 kW Platino Fiber Laser, which is now locally produced in the Prima Power Suzhou factory, allowing shorter lead times and lower production costs. Being the first machinery manufacturer in the market to develop its own laser source, Prima Power also showcased its CF3000, the high-power laser with fiber technology, designed to deliver the best performance in material processing to better suit customer needs.

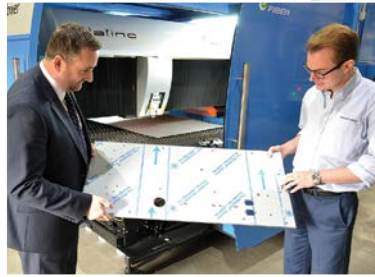
Prima Power confirmed its strong presence in the Chinese market as one of the top supplier choices for Chinese enterprises that are working towards meeting the standards laid out in the *Made in China 2025* plan. "As the cost of manpower increases, Chinese manufacturers are increasingly moving towards higher levels of automation, which guarantees standard high quality of output and requires less-trained workers. We are able to provide customized system solutions that allow complete automation for the production, from material input to storage management. Prima Power represents a reliable choice for those Chinese clients who are determined to invest and improve their production capability," says Gregori.



Prima Power Laser Gives Stead & Wilkins the Cutting Edge



On the left, Elliott Stead, operations manager for Stead & Wilkins, and Daniel McGinty, Prima Power general manager sales UK & Ireland, inspect a part processed on the Platino Fiber Laser. This Prima Power fiber laser is a proven solution for both small batches and large-scale production.



Stead & Wilkins can truly be described as a one-stop shop engineering provision.

Established in 1973, the company offers a comprehensive range of design, fabrication, and precision engineering resources, in addition to professional fitting and installation services.

Operating from a 15,000-square-foot administration and production facility in Crayford, Kent, S&W's precision engineering capabilities include 4-axis CNC milling, CNC turning, conventional turning and grinding.

S&W has earned an excellent reputation for the company's expertise in sheet metal work and fabrication across a variety of materials, ranging from stainless steel, mild steel, brass, copper, aluminium, and armor plate, for both heavy and light fabrications.

“The use of our new Prima Power Platino Fiber Laser cutting machine has speeded up many of our processes, and the rapid availability of cut material has helped to remove the potential for production bottlenecks and increased our overall operational efficiency.”

Prompted by customer demand, over the past four decades, S&W has extended its now all-embracing range of services. Regular purchases of the best available production aids have been made to help extend the company's competencies and to ensure the prompt delivery of high quality products and components. To help satisfy growing demand and to enable a further expansion of S&W's fabrication capabilities, the company recently purchased a 2D laser cutting machine from Prima Power.

Elliott Stead, operations manager at Stead & Wilkins Ltd., explains: “Our production equipment procurement program is largely driven by the demands we experience from our customers. When the volume of work we subcontract for a specific process reaches critical mass, we explore the economic viability of buying the necessary equipment,

bringing the process in-house and further extending our capabilities and control over quality. An example of this is our recent purchase of a Prima Power Platino Fiber 2D laser cutting machine.

“As we had been experiencing growing demand for a wide range of materials to be cut and were confident that this high demand would continue, rather than carry on subcontracting a great deal of this

work, we came to the conclusion that it was feasible to purchase a laser cutting machine. In addition to reducing our subcontract spend, it was a major factor that an in-house laser cutting provision would enable the availability of precision-cut material in minutes and hours, as opposed to days, when relying on subcontractors.



“Having compiled a wish list of required features and reflected on the available machines from several leading manufacturers, we came to the conclusion that the Platino Fiber general purpose 2D laser cutting machine from Prima Power best matched our needs. In addition to providing the versatility

that would accommodate our diverse requirements, the Prima Power machine delivered high-quality results, and thanks to features such as its quick setup times, was extremely productive. It also helped our decision that Prima Power enjoys an excellent reputation in the market place and that the machine was also very cost effective.

“Following a trouble-free installation, and after our operator training sessions, our new laser cutting machine is now fully operational. In addition to appreciating the machine's hardware, our staff has found the Prima Power software very intuitive and easy to use. Also, the Prima Power software is able to communicate with our existing Solid Works software without a problem.

“The use of our new Prima Power Platino Fiber Laser cutting machine has speeded up many of our processes, and the rapid availability of cut material has helped to remove the potential for production bottlenecks and increased our overall operational efficiency.”

The Prima Power Platino Fiber, as purchased by Stead and Wilkins, is a high quality, general purpose 2D laser cutting machine that is employed around the world for a multitude of applications.

Available with a capacity of 1500 x 3000 mm and with laser power ranging from 2kW to 6kW, the Platino Fiber is suitable for a wide range of cutting applications. Thanks to its automation modules, the Platino Fiber is a proven solution for both small batches and large-scale production.

The Platino Fiber benefits from a compact, monolithic architecture and a synthetic granite frame, resulting in a minimum footprint in addition to excellent thermal stability and vibration damping characteristics. A cantilever machine arrangement provides maximum accessibility, while an open cabin with fully-opening sliding doors and fiber-safe windows provides excellent visibility to the cutting process and easy accessibility for the operator.

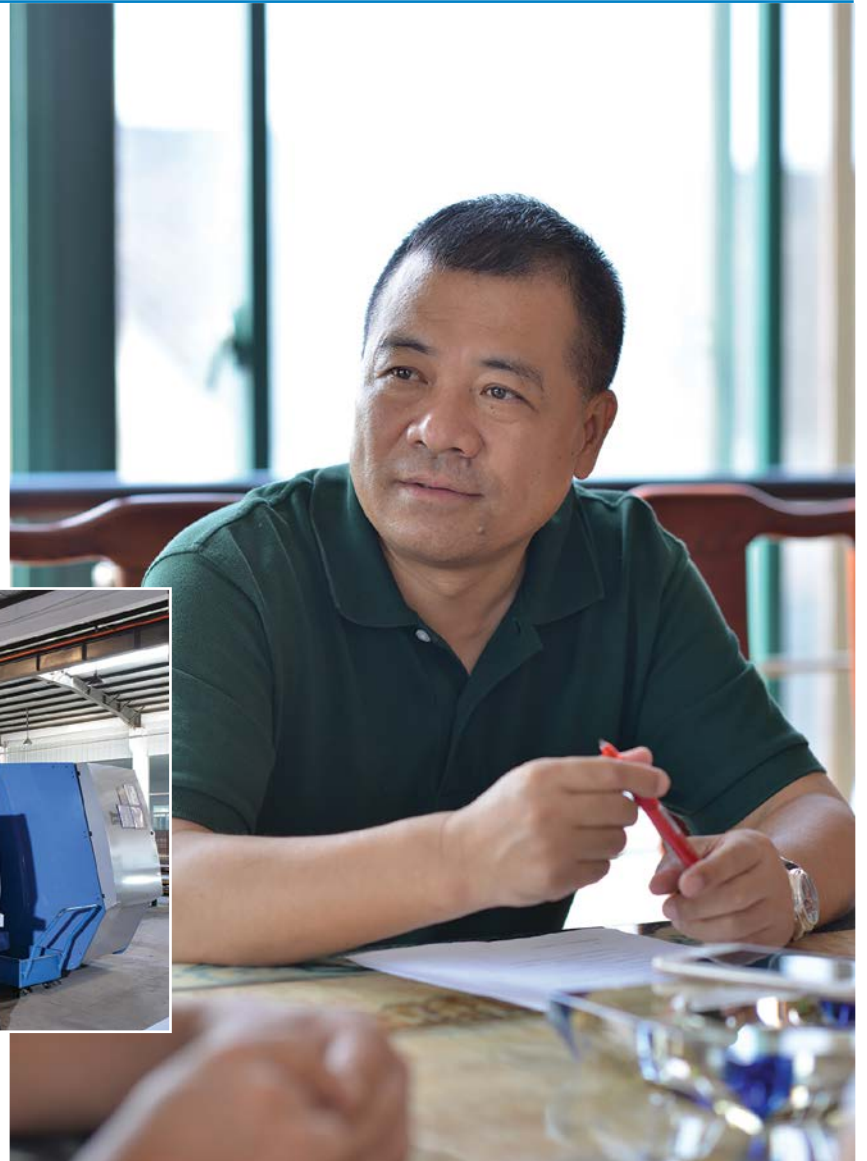
Prima Power Machines Allow Tian Xiang to Meet Challenging Goals of *Made in China 2025* Plan

Based in Zhangjiagang, Jiangsu Province, Tian Xiang is one of the most successful Chinese companies currently operating in the electrical cabinet industry. The company was founded in 1998 with starting capital of 240,000 RMB by three initial partners. After only two years, the production was valued at 40 million RMB, and today the company has grown into a 50,000-square-meter factory that employs a staff of 380, and owns fixed assets worth over 100 million RMB.

Early in their operations, Tian Xiang's partners sourced only locally-made machines for their production line. However, when the company was financially sound enough to invest in more technically-advanced, foreign equipment, they converted their factory floor to imported machines.



JIE Zhong, Tian Xiang general manager (right) found that adding Prima Power equipment to his production line not only delivered the expected increases in process efficiency and quality of output, but additionally allowed his R&D team the flexibility to develop entirely new products, positioning themselves more competitively in the international market.



“What we like about this integrated machine is the stability. It runs pretty smoothly and doesn't stop.”

“One of our biggest clients in the elevator industry had advised us to look into Prima Power products,” explains JIE Zhong, Tian Xiang general manager. “We inspected the machines at an annual exhibition and decided to purchase a Finn Power (now Prima Power) machine.”



Tian Xiang was founded in 1998 with starting capital of 240,000 RMB by three initial partners. After only two years, the production was valued at 40 million RMB, and today the company has grown into a 50,000-square-meter factory that employs a staff of 380, and owns fixed assets worth over 100 million RMB.

Although purchasing foreign-made equipment was seen as a necessary step towards improving their manufacturing processes, Zhong found that all machines were not created equal. “After purchasing a series of Japanese machines, we finally improved our capability with a Finn-Power punching machine, and later with more Prima Power equipment.”



Interestingly, Zhong found that adding Prima Power equipment to his production line not only delivered the expected increases in process efficiency and quality of output, but additionally allowed his R&D team the flexibility to develop entirely new products, positioning themselves more competitively in the international market. "With this equipment upgrade, we were able to not only raise the standards of production, but also to develop new high-quality products. We used to work mainly on GGD cabinet bodies and 8 MF materials, now we are capable of producing all kinds of electrical cabinets available in the market, such as GC, MN, GCK, etc., by all means comparable to internationally-made and imported cabinets."



Tian Xiang is one of the most successful Chinese companies currently operating in the electrical cabinet industry.



Tian Xiang added a Prima Power E5x Evolution + Compact Express (left) and one Platino 3 kW laser, realizing an increase in speed of production, and noting the added benefit of a simple user interface in addition to a decrease in labor costs relative to sales volume.



"We wouldn't be able to achieve those standards without the support of innovative and skilled suppliers like Prima Power."

In March 2013, Tian Xiang purchased a Prima Power Shear Genius® SGe6, punch/shear combination machine. "What we like about this integrated machine is the stability," notes Zhong. "It runs pretty smoothly and doesn't stop."

The following June, the company added one E5x Evolution + Compact Express and one Platino 3 kW laser, realizing an increase in speed of production, and noting the added benefit of a simple user interface, in addition to a decrease in labor costs relative to sales volume. "With Prima Power machines we were able to greatly speed up the production process," explains Zhong. "The workers are generally able to adjust and use the new equipment pretty quickly. The level of automation allowed us to go from 48 to 18 workers, while sales volume tripled!"

With China embracing the challenging goal of Made in China 2025, manufacturing companies are increasingly realizing the need to improve the standards and quality of production in order to drive domestic consumption, as well as to ensure the ability to compete with international producers. "Manufacturers that pursue a high-tech approach will thrive in China, despite the economic slowdown," concludes Zhong. "We need to transform technology into products that are highly competitive in the market for price and quality. We wouldn't be able to achieve those standards without the support of innovative and skilled suppliers like Prima Power."

"With Prima Power machines, we were able to greatly speed up the production process."

Tian Xiang has advised several other companies in the area to invest in Prima Power equipment, often welcoming potential buyers from the electric equipment industry to their factory to review the machines and their performance.

Shear Genius Opens the Door to Higher Productivity at LaForce Inc.



According to Brad Johnson, industrial engineer and continuous improvement coordinator, the Prima Power SGe ensures the same quality in every part, from first to last.

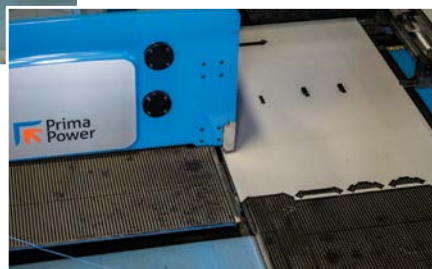
In 1954, Joe LaForce purchased a modest hardware supply business in downtown Green Bay, WI. Today, LaForce, Inc. has evolved to become one of the largest distributors of commercial doors, frames, hardware, and building specialties in the United States. LaForce products can be found in a wide variety of office buildings, health care facilities, hospitals, nursing homes, clinics, schools, retail outlets, football stadiums, and many other locations.

In addition to its Green Bay headquarters, LaForce operates 11 other locations throughout the United States. Services include custom manufacturing of doors and frames, product installation, pre-installation, pre-finishing, security integration, specification writing, fire door inspections, and key system services. Today, LaForce has grown to nearly 500 employees in its 12 locations.

In the early years, the company operated mostly as a distributor. By 1969, it became apparent that in order to sell with consistent quality and make timely deliveries, LaForce would need in-house door and frame production capability. The company purchased two turret punch presses, two hydraulic shears, and a number of press brakes to fabricate and bend their products.



The SGe eliminates wasteful skeletons and costly secondary operations such as deburring. Nibble edges on the part exteriors are eliminated through the use of the integrated right-angle shear.



By 2013, the management of LaForce began its search for a more efficient and productive way to fabricate

their products in its 310,000-square-foot Green Bay facility. "We used to shear the sheet to make blanks, then punch the blanks into parts," explains Brad Johnson, industrial engineer and continuous improvement coordinator. "There were many wasted hours in material handling and non-productive labor."

After much research, LaForce purchased the Prima Power servo-electric Shear Genius (SGe) at the end of 2013.

Servo-Electric Shear Genius

With the Shear Genius concept, the objective is to provide a machine capable of transforming a full-size sheet into finished parts. These parts can be moved to the final production stages for immediate integration directly into the final product assembly.

The heart of the Shear Genius SGe is an updated servo-electric 30-metric ton punching machine with 1,000 hpm stroke speed, 250 rpm index speed, and 150 m/min sheet positioning speed. The right-angle shear has a servo-electric actuation system, which makes shear movement both fast and fully CNC controlled for optimum productivity. Material thickness in shearing can be up to 5 mm (Al), 4 mm (mild steel) and 3 mm (stainless steel). Automatic loading has been integrated, and both part removal and part sorting are programmable and automatic.



With the Shear Genius concept, the objective is to provide a machine capable of transforming a full-size sheet into finished parts. These parts can be moved to the final production stages for immediate integration directly into the final product assembly.

The SGe is able to perform the most demanding jobs with minimal set-up times and lights out unmanned operations. Shear Genius increases material productivity through efficient and versatile nesting programs. As loading, punching, forming & upforming, unloading, sorting, and stacking become automated, the result is a finished part with a dramatic reduction in scrap and manual labor while increasing productivity.

The SGe eliminates wasteful skeletons and costly secondary operations such as deburring. Nibble edges on the part exteriors are eliminated through the use of the integrated right-angle shear. In the SGe, the sheet is loaded and squared automatically, without human interference, ensuring very accurate parts. In fact, the same clamps that hold the sheet for punching also hold it for shearing. In essence, the Shear Genius allows the automated process to begin with a full-sized sheet of material and end with a finished part after automated loading, punching, forming, shearing, and unloading – all in one operation.

The level of automation can be customized through Prima Power's flexible modular solutions for raw material storage & management, loading, unloading, sorting, and stacking. These features can be added

later as budget allows and production demands increase or change. The SGe ease of operation does not compromise the cell's per-minute part production, flexibility, or ability to fabricate complex parts. On average, compared with a stand-alone turret punch press, the SGe reduces total manufacturing time by 60%.

Keeping Promises

"The SGe does exactly what Prima Power said it would do," says Johnson. "We vetted this machine closely. We did a lot of research prior to purchasing the SGe. We were initially looking for a laser, as we had plenty of people convince us that the fiber laser was the way to go. We looked at several different machines. But then Prima Power's sales team convinced us that we didn't necessarily need a laser. Our parts are long and rectangular without any contours or circles. We wanted to eliminate the blanking out parts and replace it with processing an entire sheet with common line cutting without having to shake out parts at the end. The SGe has worked very well for us. As a result of the SGe, we sold one of the turret punch presses and one of the shears. We now use the other turret punch press and shear as a back up."

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Increasing Productivity & Improving Quality

And how has the SGe performed in providing increased productivity? "In 2013, we averaged 2,209 parts/week (sheared/punched parts utilizing three different machines and 135 man hours)," explains Johnson. "Today, just using the SGe, we produce an average of 2,630 parts using just 48 man hours. The shear and punch processes used to create our parts went from 16 parts/man hour to 55 parts/man hour. That's a 145% improvement."

The SGe has also improved the quality of the LaForce product line. "Before the SGe, we had quality issues with part variances caused by our shear to blank and turret punch press methods," says Johnson. "With the SGe, we get the accuracy we need. Every part comes out the same, from first to last. Many of our quality issues have virtually disappeared. The accuracy of the SGe has led to savings in other processes as well. In forming, set-up times improved as parts are now consistent with far less variance. This also led to improvements in assembly and weld times as the parts fit up better."



LaForce, Inc. has evolved to become one of the largest distributors of commercial doors, frames, hardware, and building specialties in the United States. LaForce products can be found in a wide variety of office buildings, health care facilities, hospitals, nursing homes, clinics, schools, retail outlets, football stadiums, and many other locations.

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Other Shear Genius features and benefits include:

Tool Holders – Prima Power incorporates an individual tool holder concept that allows customers to design their own turret layouts. Unlike other designs, specific tool stations are not machined into the turret. Prima Power offers the only flexible selection of tool holders in the industry. Any tool from Prima Power's tooling partners can be installed in a Prima Power turret. Up to 10/15/16 or 24 auto-index, forming, or Multi-Tool® stations may be installed in a Prima Power turret.

Auto-Index – Prima Power's unique auto-index system precisely rotates the punch and die in their tool holders. Rotation in .001 degree programmable increments gives the machine the ability to rotate beyond 360 degrees, thus allowing the system to automatically select the shortest path to rotate to a programmed angle input into the NC part program with simplicity, speed, and reliability, and no tonnage constraint.

Multi-Tool® – Prima Power's Multi-Tool stations increase the number of tools available in a turret, thus reducing setup and increasing productivity. The Multi-Tool system allows multiple tools to be put into one station.

Upward Forming System – Prima Power's upward forming option provides more accurate forming and greater forming heights up to 16 mm (.63"). Another advantage is that all dies are at the same height and there are more high-forming dies in the turret, reducing risk of material damage and increasing machine uptime.

Brush Tables – The brush tables are designed for lower noise, increased sheet support, and elimination of the risk of scratches.

"The SGe has solved the shear and punch part of our puzzle," concludes Johnson. "Our goal now will be to examine our forming and spot welding processes."

Prima Power Vision on Industry 4.0 and Internet of Things (IoT)

By Ivana Montelli, SW Product Manager, Prima Power



Manufacturing leaders are living through a period of profound change, opportunity, confusion, and competitive pressures. Industry 4.0, a term that refers to the fourth industrial revolution, represents a paradigm shift from centralized to decentralized manufacturing. And it has the potential to change the traditional role of assembly lines. Industry 4.0 promises to transform the way engineers design and build products over the next two decades.



The leading theme of EuroBLECH 2016 was Industry 4.0. During the exhibition, Prima Power was presenting the strength on that concept in multiple ways. In today's business discussions, Industry 4.0 and Internet of Things (IoT) are the "hottest" topics. Every company has its own strategy and story on how they are a part of Industry 4.0 and IoT.

Industry 4.0 is focused specifically on the manufacturing industry pursuing the goal to ensure its competitiveness in a highly dynamic global market. The IoT is focusing more on enabling and accelerating the adoption of Internet-connected technologies across industries, both manufacturing and non-manufacturing.

We have continued to evolve our software following this direction. And in our Digital World and Digital Service Area at EuroBlech we presented a full array of solutions for smart manufacturing, covering different domains of Industry 4.0. This means being ready not only for today's production needs... but also for tomorrow.

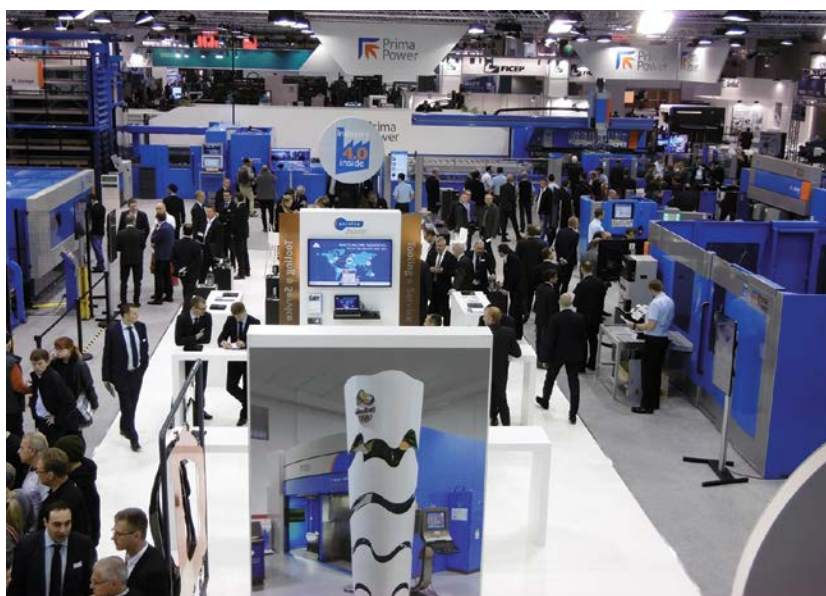
Prima Power has a clear and practical vision on Industry 4.0 comprising three key modules:

1. Intelligent machines and factories
2. Smart software
3. Remote machine diagnostics and maintenance.

Intelligent Machines & Factories

Intelligent Machines with the latest technology were demonstrated in the large area at EuroBLECH 2016:

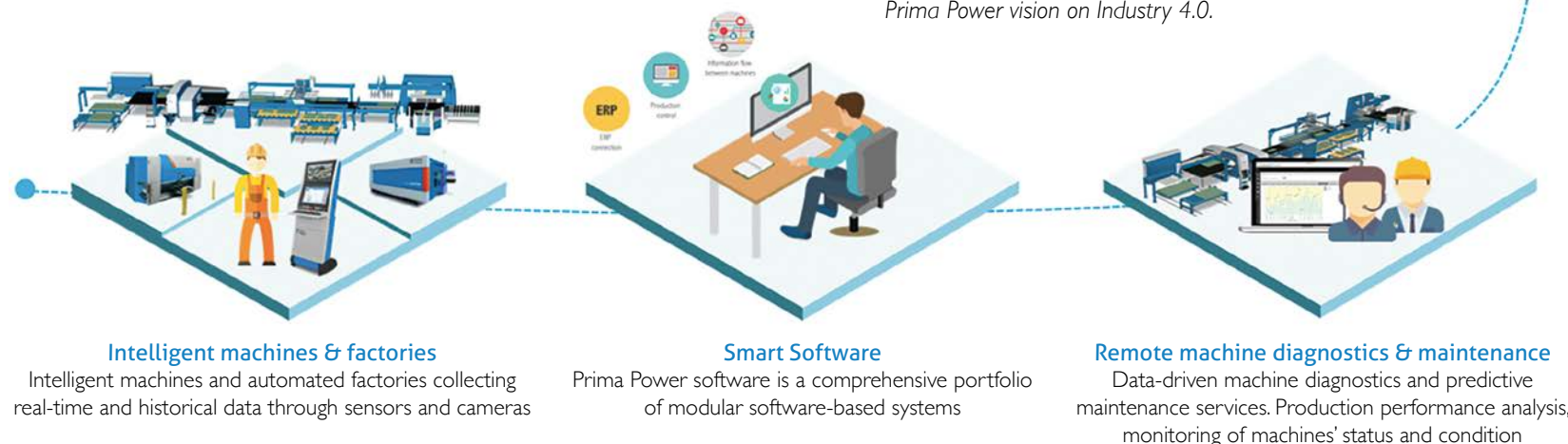
- PSBB Line including Servo-electric Shear Genius SGe®
- Laser Genius
- Laser Next
- Combi Genius
- Platino Fiber
- Panel Bender
- Press Brake



Overview of the machine area.

Prima Power Industry 4.0

Smart manufacturing at your fingertips



Prima Power vision on Industry 4.0.

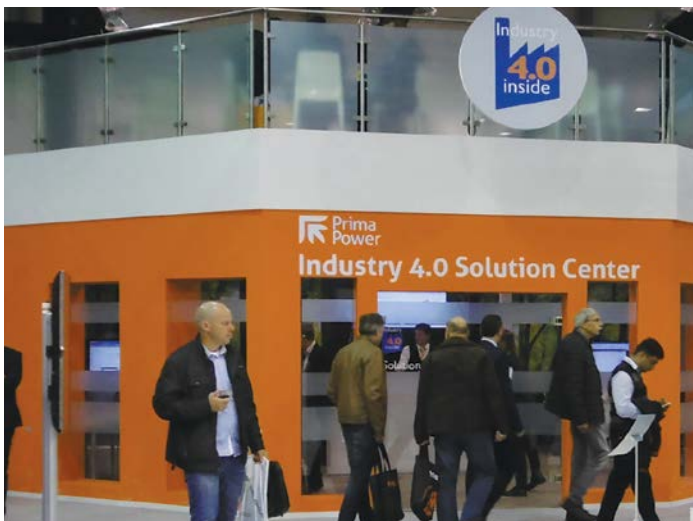
Smart Software

Smart software was demonstrated in the Industry 4.0 Solution Center and the Digital World:

- NC Express e³ Cam system
- Tulus® Power Processing
- Master Bend Cam
- ThreeDEditor
- Tulus® MUPS
- Tulus® E-Kanban software
- NT Genius digital model and software in the Digital World



Genius presentation in the Digital World.



Industry 4.0 Solution Center.



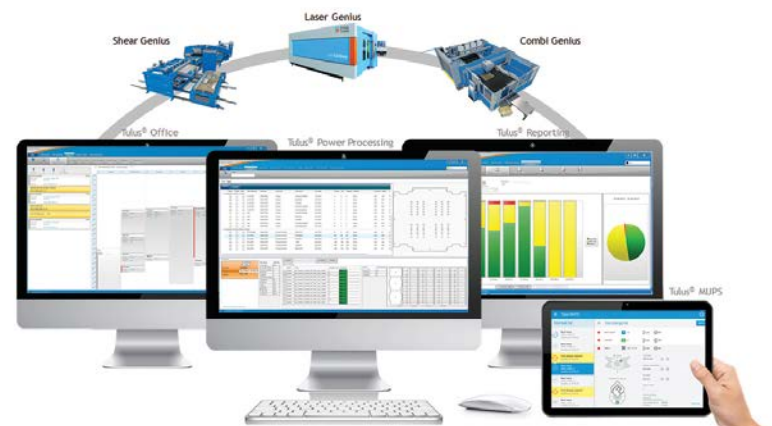
Software presentations in the Industry 4.0 Solution Center.

Remote Machine Diagnostics & Maintenance

Prima Power has entered a new age of industrial services. With the latest technology, we are able to turn large sets of machine data collected online into smart insights valuable to the service department. Prima Power Remote Service team continuously collects and monitors different machine parameters to ensure that machines are running efficiently. Condition monitoring and predictive maintenance are value services that Prima Power provides to customers.



The concept of Remote Machine Diagnostics.



All machines connected to the same software platform.

Shear Brilliance Delivers Higher Quality and Productivity to Finnish Manufacturer

Lapuan Piristee Oy is a family-owned metal sector company established over 40 years ago. Today, Piristee is the leading wholesale supplier of rainwater systems and roof safety equipment in Finland. Key products include components for rainwater systems, wall and roof ladders, roof walkways, and snow guards, as well as gutter machines. The main factory is located in Lapua, and has a total production, warehouse, and office area of more than 12,000 m².

In addition to its proprietary products, the company manufactures products to order and is a skilled subcontractor in the sheet metal industry. Interaction with customers and suppliers has enabled the company to create a number of innovations.

Currently, Lapuan Piristee Oy employs more than 80 people, and its turnover was EUR 17.7 million in 2015. The gradually expanding customer base and the increasing number of exports contribute to a positive growth outlook.

Piristee complies with the ISO 9001:2008 quality management system and ISO 14001:2004 environmental system. The entire staff has received training in quality, environmental matters, and customer orientation.

An Investment in Shear Brilliance

"Prior to our latest investment – the Shear Brilliance (SBe) servo-electric punching/shearing machine – our sheet metal machines always operated at capacity," explains production manager Kaj Haapa-aho. "The throughput of the existing three Shear Genius (SG) machines from Prima Power was 1500 - 2000 metric tons of material per year. Production had to be shuffled between our Kauhava and Lapua factories, and we had to plan very carefully which location was the most feasible location for manufacturing each product."

The older machines at the Lapua factory were not suitable for making all new products and carrying out new work stages. They were also slower than the newer equivalent SG machine in Kauhava. "However, we were slowly approaching the maximum capacity of the Kauhava sheet metal machine, even though we tried to plan production schedules carefully and worked weekends during peak demand," continues Haapa-aho. "Our subcontracting work increased and we needed more capacity in order to quickly respond to new orders."



The new machine was installed in the existing automatic sheet warehouse, and overall, the project succeeded better than anticipated. Thirty-hour production runs on the SBe began immediately.

Other reasons for making the investment were the increased precision and faster speed of the SBe. Another important factor tipping the scales in favor of the servo-electric technology was the dramatic reduction of maintenance. The operating and maintenance costs of a hydraulic machine are considerably higher, and the company wanted to eliminate the need to handle oil.

The goal was to transfer a major portion of standard production to the Lapua factory in order to free additional capacity on the Kauhava machine. However,

the company did not want to increase the floor area occupied by the machines.

In the autumn of 2014, Piristee made an investment decision on the purchase of the new servo-electric Shear Brilliance punching/shearing machine, which would replace the older SG. The new model was on display at the EuroBlech fair in Hanover at the time. The decision to acquire a new machine was not made in haste: "We looked into all possible alternatives, but Prima Power's punching and shearing machine beat all others in performance," says Piristee's managing director, Petteri Nieminen. The alternatives included a laser combination machine and a "flying optic" laser machine, but at the end of the day, they both turned out to be slower. "When an SBe model with 20% better performance



(From left to right) Production manager Kaj Haapa-aho, machine operators Tomi Halmesmäki and Janne Halmesmäki, and CEO Petteri Nieminen. The goal was to transfer a major portion of standard production to the Lapua factory in order to free additional capacity on the Kauhava machine. However, the company did not want to increase the floor area occupied by the machines.

was introduced to the market, we made comparison calculations and the final decision was quite easy," explains Nieminen.

Other decisive factors included history and reliability. The old SG machine was over 20 years old and still functioned reliably and steadily, but its speed no longer matched that of modern technology. Additional capacity was needed.

When Piristeel was contemplating whether to invest in a new SGe or SBe machine, tests tipped the scales in favor of the SBe. The main differences were not only the speed, axle motions, and dynamic operations of the machine, but also the reduced time it takes to change sheets when switching to a larger sheet size.

"When an SBe model with 20% better performance was introduced to the market, we made comparison calculations and the final decision was quite easy."

"Repositioning is not needed with the 1500 x 3000 mm sheet, since SBe's axle motion is longer," adds Haapa-aho. "The time needed to set up the tools is now also almost non-existent thanks to the larger tool turret. Soon the new SBe will perform the work of two old SG machines".



Piristeel is the leading wholesale supplier of rainwater systems and roof safety equipment in Finland. Key products include components for rainwater systems, wall and roof ladders, roof walkways and snow guards, as well as gutter machines.

personnel on the new SBe was much easier because the control system in the new machine provides the operator with instructions during operation," explains Haapa-aho.

Overall, the company is very happy with Prima Power's maintenance service, which was also an important factor in the investment decision. "Whenever we've needed maintenance, Prima Power has responded swiftly," concludes Haapa-aho. "They always thoroughly look into what might be the problem with any machine. Prima Power's maintenance staff is innovative, which is admirable these days. The intensive follow-up period offered for new machines is a great service. It is excellent that Prima Power provides such good after-sales service."

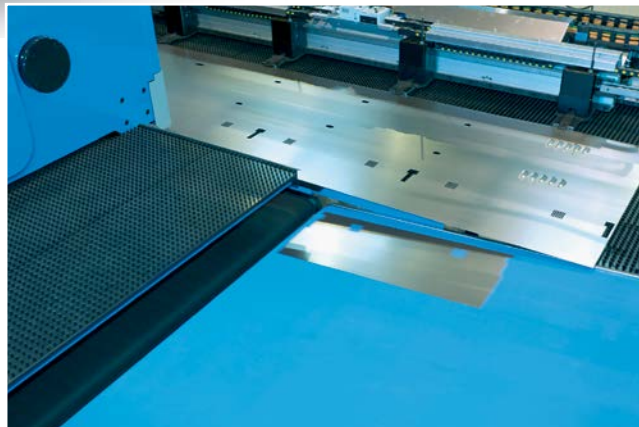
"The time needed to set up the tools is now also almost non-existent thanks to the larger tool turret. Soon the new SBe will perform the work of two old SG machines."

Piristeel has also been satisfied with the Tulus Office software, which can be used to monitor the machine utilization rate and the completed production, as well as to plan work. In addition, the software provides history data which can be viewed if a defect occurs, making it possible to address a situation immediately should problems arise.



SBe Makes Immediate Impact

The new machine was installed in the existing automatic sheet warehouse, and overall, the project succeeded better than anticipated. Thirty-hour production runs on the SBe began immediately. The prior experience of the company and personnel in operating SG machines certainly made things easier, and nests could be made properly right from the start. The new machine is also very user friendly. "Training



Inherent benefits of SBe servo-electric technology are operation economy due to low power consumption and low maintenance requirements, as well as excellent accuracy in all the versatile capabilities. Prima Power modularity allows the fast high-precision manufacturing of components that also require forming, bending, tapping, and marking in a single, flexible cell and a fully automatic process. Finally, by its very nature, the integrated punch/shear concept can bring savings of 10% to 20% in raw material consumption.

Investment in Automation Forms Success for Canadian Manufacturer



According to Johanne Rappoccio, vp operations, and Robert-Daniel Bedard, vice president, BMP has a long history of investing in automation and technology. It has always been the company's mindset to have this technological platform, and that has helped it grow into other industries.

Since its 1984 founding in a modest 8,000-square-foot leased building, BMP Metals Inc., Brampton, Ontario, has earned a reputation as a fully-integrated custom precision sheet metal fabricator with additional specialized services in engineering design, CNC machining, milling and turning, electromechanical assembly, paint coatings, and plastic injection molding. BMP offers turnkey solutions for its customers.

BMP Metals Inc. is the manufacturing arm of the Bempro Global Group of companies, which includes:

- **CableTalk** has become synonymous with excellence and innovation in the telecom industry. With over 22 years of experience, CableTalk works actively with clients to design and develop customized data center solutions. Products include enclosures, modular hot/cold aisle containment, "flex-top" cabinets, racks, cable management and power distribution.
- **ClimateWorx International** is a supplier in the mission critical, cooling solutions industry, and is an exciting environment to gain insight on the entire process from design to delivery. ClimateWorx International prides itself on building innovative, custom solutions to fit every customer's needs. ClimateWorx International offers products ranging from 1-50 tons of cooling, which use cooling options, such as chilled water and refrigeration (DX) in air, water, and glycol, along with combinations for dual and free cooling selections.

Today, BMP has over 125,000 square feet of manufacturing capacity spread across two buildings in Brampton, Ontario, with over 125 employees. The company services such industries as telecommunications, industrial automation, atomic energy, transportation,

medical, aerospace, military, and others. In order to achieve its goals, BMP has a track record of investing in the latest automated equipment.

"We began investing in automation and technology years ago," explains Johanne Rappoccio, vp operations. "It has always been our mindset to have this technological platform...and that has helped us grow into other industries. The nature and the mix of our business has changed over the years, but we still have a mix of high and low volume. But having automation and lights out capability allows us to react to different projects and customer demands. BMP is a one-stop shop, turnkey provider. We love challenges."

Prima Power Equipment

In the sheet metal fabrication area, BMP began a 20-year partnership with Prima Power (previously Finn-Power) in 1997 with the purchase of the Express (punch, load/unload). A few years later, BMP traded in the Express for a Shear Genius (punch/shear) that is still in operation today. To boost its production capacity, in 2002 BMP chose the LPe high-precision laser/punch combination flexible manufacturing cell. According to Robert-Daniel Bedard, vice president, the LPe can do laser cutting, punching, nibbling, upforming, marking, taping, bending, sorting, and stacking – all unattended, all in a single setup. Today, the LPe is still in operation and making precision parts for BMP. "We use the SG and the LPe every day," explains Bedard. "We have the capability of running both the SG and the LPe lights out."

"The EBe replaced four press brakes. If you look at our core business, we produce many panels and shelves, and the EBe was a perfect fit."



BMP began a 20-year partnership with Prima Power (previously Finn-Power) in 1997 with the purchase of the Express (punch, load/unload). A few years later, BMP traded in the Express for a Shear Genius (punch/shear) that is still in operation today. To boost its production capacity, in 2002 BMP chose the LPe high-precision laser/punch combination flexible manufacturing cell.

In 2012, BMP purchased the Prima Power Domino 2D/3D laser machine to fill the needs of a new customer in the transportation industry. The Domino laser has a 5th axis for part turning on materials such as tube or other 3D shapes. "Because of the welding and the beveling that was needed, we needed the 3D capacity," explains Bedard. "Today we use it mainly for thicker material. It allows us to be flexible and is great for prototyping or a large run."



BMP procured the Prima Power EBe panel bender in 2015. The EBe servo-electric Express Bender is a bending solution that is designed specifically for each fabricator's production requirements to achieve maximum productivity, quality, and repeatability.

Express Bender EBe

Most recently, BMP procured the Prima Power EBe panel bender in 2015. "The EBe replaced four press brakes," explains Bedard. "If you look at our core business, we produce many panels and shelves, and the EBe was a perfect fit."

The EBe servo-electric Express Bender is a bending solution that is designed specifically for each fabricator's production requirements to achieve maximum productivity, quality, and repeatability. The bending operation is fully automated, from the loading of flat punched parts to unloading of the finished product.

"When you hit start, the EBe is picking up the piece and immediately bending it."

The EBe bender has a maximum bending length of 131" (3550 mm) and a maximum opening height of 8" (200 mm). The new construction features actuations of the bending blade movements (vertical and horizontal) by NC servo axes instead of hydraulic cylinders. The upper tool movements are also made by another NC servo axis.

Prima Power EBe provides the high bending quality required in demanding applications. The quality is achieved through precise control of bending axes, fast and smooth bending motion, programmability, and rigid construction that is immune to variation in thermal conditions. "The last bend negative is an excellent feature on the EBe," says Bedard. "The AUT and ASP tooling have worked out really well."



Bending Automation for Productivity

An increasing number of fabricators are facing a situation, where large volumes are being replaced by the need to produce small batches on a just-in-time basis. In traditional bending with press brakes, setup times, technical limits in producing sophisticated components and the requirement for skilled personnel may prove problematic in such manufacturing tasks. Based on extensive experience applying servo-

electric technology in automatic panel-bending solutions, Prima Power offers an automation solution which focuses on setup rather than material handling (loading, rotation and unloading are manual). With options ATC (Automatic Tool Change) and barcode reader, the machine makes the setup automatically and activates a new part program.

"Going from manual to automatic tool change cuts the setup time dramatically," says Bedard. "The tools are being changed as you are putting material on the machine. When you hit start, the EBe is picking up the piece and immediately bending it. Our productivity and quality have been considerably increased by the EBe. Our welders are having a much easier time welding corners because the tolerances are much tighter and very consistent. The majority of our bending is now done on the EBe."

"Originally our mindset was to utilize the EBe for the larger volume runs. But it was equally productive on the smaller runs. The changeovers are very quick."

"Originally our mindset was to utilize the EBe for the larger volume runs," explains Rappoccio. "But it was equally productive on the smaller runs. The changeovers are very quick. We were able to off-load four less efficient press brakes that had high energy demands with the servo-electric EBe. It has a much better energy footprint."

BMP Metals Inc. is the manufacturing arm of the Bempro Global Group of companies, which includes CableTalk, a name now synonymous with excellence and innovation in the telecom industry and ClimateWorx International, a supplier in the mission critical, cooling solutions industry, and is an exciting environment to gain insight on the entire process from design to delivery.

The Power of Two: Changing How Turbine Engines are Manufactured

By Terry VanderWert, President, Prima Power Laserdyne and Mark Barry, Vice President of Prima Power Laserdyne

It's another first for Prima Power, and one the aerospace industry has been waiting for: a dual 6-axes fiber laser machining system for precision 3D laser cutting, drilling, and welding.

The Driver: New Aircraft Engine Programs With Thousands Of Engines On Order Require New Manufacturing Technology

The main goals of major new engine programs from the world's leading turbine engine manufacturers have been to provide aircraft with more fuel efficient, quieter, and environmentally-friendly engines. To help meet these objectives, the latest design of combustors contain thousands, in some cases millions, of effusion (shallow angle to the surface) cooling holes. These holes have a variety of shapes, from cylindrical where the cross-section is constant through the thickness of the material, to shaped holes with a cross-section that varies continuously through the thickness.



With the goal of greater engine efficiency has also come increased pressure for precision – consistency of air flow through each of the laser drilled holes and accuracy in hole location within the component to ensure precise coverage of the component surface with cooling air delivered by the holes.

The increased number of holes and complexity of hole designs, including use of thermal barrier coatings (TBC), have led to growth in the number of laser systems required for production of jet engine components.

Dual Laser Beam Positioning Systems Provide Floor Space Efficiency, Throughput, and Precision

Engine manufacturers have become increasingly aware of the manufacturing floor space required for laser systems. One of the design goals of the LASERDYNE 606D was to maximize the



throughput per unit of manufacturing floor space for a work envelope capable of processing the range of components. It achieves this through a computer-controlled, 3D laser system that includes two completely independent machines in a single unified structure. The laser beam is positioned in five axes in each of the two machines since the moving beam design has proven benefits of floor space efficiency, precision, and throughput. A fully integrated sixth axis rotary table provides indexing and contouring of workpieces.

In addition to the two 3D workstations of the LASERDYNE 606D, the system includes an integral Class I enclosure with dual automated doors; two S94P Laser

Process Controls for integrated control of motion, laser, and process sensors; and two fiber lasers.

The two workstations of the LASERDYNE 606D system are fast and accurate. The maximum speed of the X, Y, and Z linear axes is 50 m/min (2,000 in/min) with a maximum acceleration of 2 g. Bi-directional accuracy of the linear axes is 20 μ m (0.0008 inch).

With linear axes travels of 600 x 600 x 600 mm, the work envelope has capacity for processing high volume combustors and related sheet metal assembly parts of the new engine designs, as well as those of legacy engines.

Because of the space-efficient footprint and close proximity of the two workstations, both can be run by a single operator.

"The output per unit of manufacturing floor space is maximized through the system's six axis dual workstation configuration and through the performance of the three linear and three rotary axes," explains Terry VanderWert, Prima Power Laserdyne president. "The 606D is the beginning of an entire generation of new multi-axis laser systems."

Custom Built Laser Systems Not the Answer

Aerospace manufacturers require process consistency and repeatability in their manufacturing technology. Custom built laser systems are restrictive, costly and may not provide a path to future laser technology. By comparison, the 606D is both backward compatible and "futureproof". Complex aerospace laser programs operated on earlier LASERDYNE systems are compatible with the 606D. Likewise, new programs developed for the 606D will be designed to operate on future LASERDYNE models.

LASERDYNE BeamDirector® Technology Continues To Lead In Laser Processing Engine Components

The 606D includes the latest generation of BeamDirector. It provides rotary and tilt (fourth and fifth) axes of laser beam motion. Rotary (or C axis) motion is ± 450 degrees about the



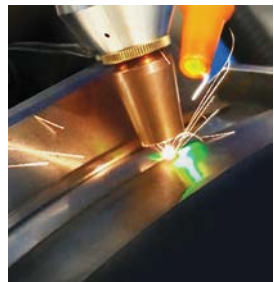
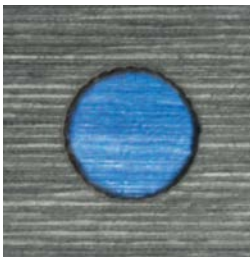
Z axis, while tilt (or D axis) travel is ± 150 degrees about the C axis. The LASERDYNE BeamDirector features a direct drive design, optical encoders for high accuracy (± 6 arc-second) and repeatability, high-assist gas pressure and flow, and adjustable mirrors for easy and accurate beam alignment. The 606D BeamDirector is protected with a 5-year unlimited hours warranty covering damage caused in a collision.

“SmartTechniques™” Lead to Smarter Laser Processes

The 606D also incorporates an expanding suite of proprietary capabilities, called “SmartTechniques”, that are standard features of its S94P control.

They include:

SmartStop™ – reduces damage to a surface directly behind the one being drilled (“backwall”), important in combustor drilling.



SmartShield™ – provides protection against excessive oxidation in the weld area, while also protecting the beam delivery optics with regular, clean shop compressed air. (Patent Pending)

SmartPierce™ – minimizes spatter and reduces time for piercing in cutting and drilling processes.



SmartRamp™ – eliminates the depression at the end of laser welds.

Two S94P Laser Process Controls with a Multitude of Advanced Features

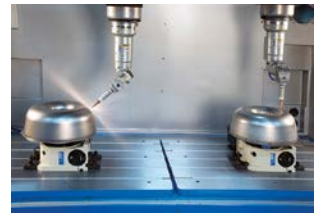
The LASERDYNE S94P control includes smart solutions for cutting, welding, and drilling of clean, accurately-produced turbine engine parts.

They are:

- Automatic Focus Control™ for capacitive part sensing of uncoated metals.
- Optical Focus Control™ (OFC) (Patented) for sensing and mapping of thermal barrier (ceramic) coated surfaces.
- CylPerf™ and ShapeSoft™ graphical programming utilities for producing patterns of cylindrical and shaped holes.
- PresSure™ for control of assist gas pressure from within a laser processing program.

Robust, Stable Base And Enclosure Houses Dual Motion Systems

An important consideration in saving machine floor space is the 606D single, cast machine structure that houses both work stations. The structure provides significant dampening of external vibrations so they are not transmitted to the laser and optical beam delivery system.



Both work stations have easy load position and height with convenient access to the motion system.

The Class I laser safety enclosure includes two automatic vertical sliding doors for access to the two workstations.

Linear motors contribute to the 606D's higher velocity capability. A new camera and optics provide high image quality at higher magnification allowing for easy incorporation of automation. The latest LASERDYNE patented OFC provides more precise sensing of metals and non-metals to compensate for the less than perfect components which the 606D will process.

All LASERDYNE workstation components are designed and built to exacting specifications. This insures volumetric accuracy throughout the work envelope (600 x 600 x 600 mm), as well as for long-term reliability in an industrial environment. The workstation provides up to seven axes of motion, including a fully-integrated and contouring rotary table or rotary/tilt table combination.

The 606D System Now And For The Future

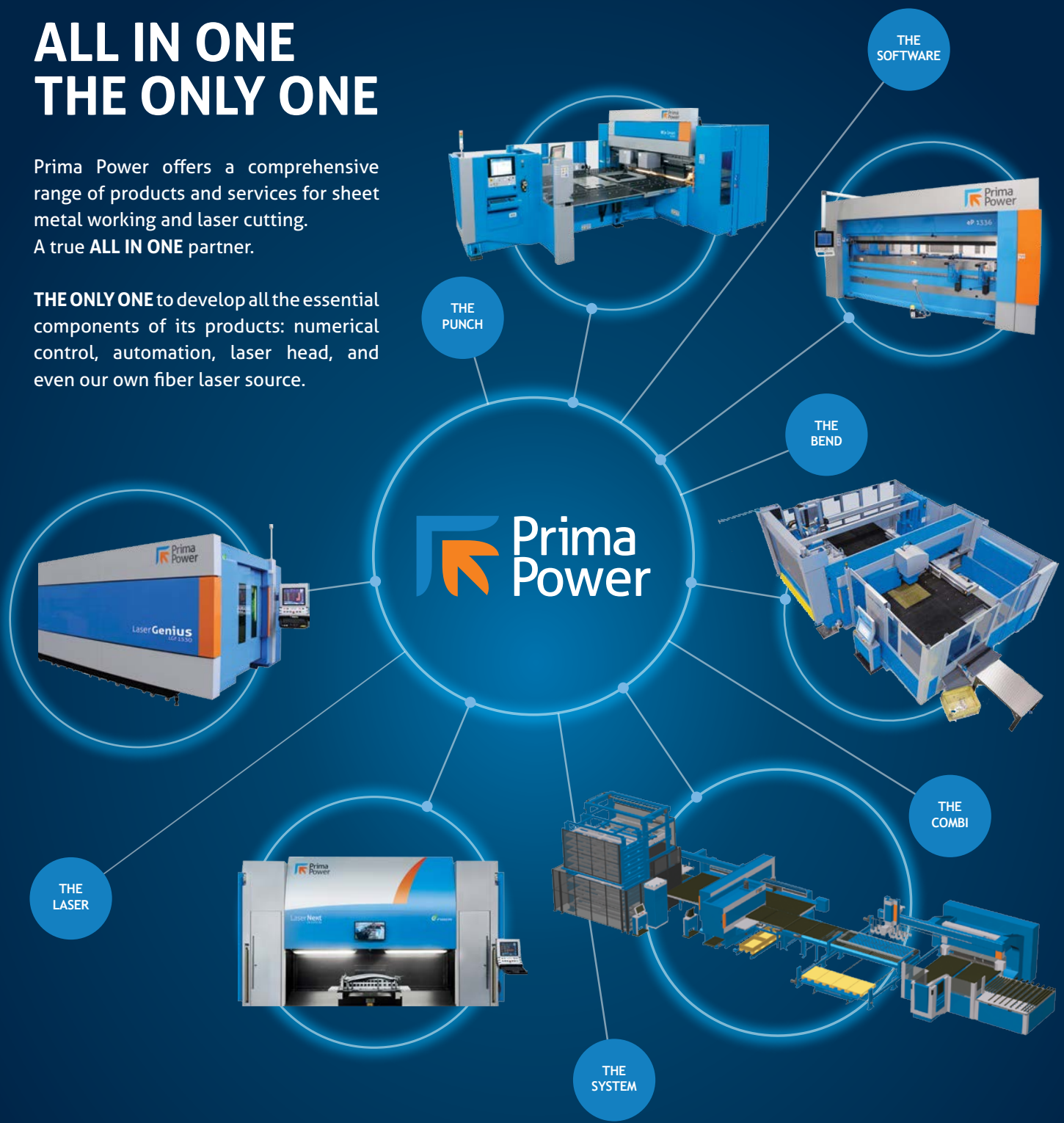
It's significant that the aerospace industry is leading the way with this new technology. Others in medical and transportation are soon to follow. This is an exciting time for complex laser processing.

For more information about the LASERDYNE 606D system, call 763-433-3700, Email: LDS.SALES@primapower.com Website: www.primapower.com

ALL IN ONE THE ONLY ONE

Prima Power offers a comprehensive range of products and services for sheet metal working and laser cutting. A true ALL IN ONE partner.

THE ONLY ONE to develop all the essential components of its products: numerical control, automation, laser head, and even our own fiber laser source.



Season's Greetings

