

POWER *Line*

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CUSTOMER PROFILES • NEW TECHNOLOGY • PRODUCTIVITY • FLEXIBILITY

The POWER LINE
is a Prima Power
Publication



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Grow with the Perfect Combination

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



Mastering the art of combining technologies and software into fully-automated manufacturing systems is the cornerstone of our activity.

The comprehensive range of our standard products can be combined to obtain systems covering different stages of sheet metal manufacturing and satisfying the different production needs of our customers.

This is the reason why our motto for the latest international exhibitions (EuroBLECH in Hannover, CMWS in Shanghai, FABTECH in Atlanta) was *Grow with the perfect combination*. All systems exhibited at these trade shows are the result of a combination and set new industry standards for process reliability and efficiency.

The need to automate the manufacturing processes is growing, and due to the combinability of our products you can always reach the level of automation suited for your business. Moreover, the increasing diversification and customization of the products is leading to smaller and more differentiated production batches. Manufacturers have to be flexible and lean to keep pace with these frequent changes. Flexible and modular systems are the answer to these needs.

For a powerful integration of our products, we have developed a three-factor strategy: the reliable machine as a stand-alone, the efficient combinability of several machines



as a production line, and the smart management of the whole solution with the software.

Our systems are able to suit the needs of each singular application and each single customer. This is possible thanks to the capacity of combining into a system the comprehensive range of our standard machines and technologies, with a high level of automation and interconnectivity.

Further to the international trade show, this autumn was also marked by our first *Innovation Day*, the event in which the Prima Industrie Group launched its new brand, Prima Additive, focusing on turnkey solutions for additive manufacturing. With this new division, the Group can offer new products and combinations to its customers, also covering the highly-innovative and fast-growing segment of 3D metal printing.



The perfect combination we refer to in our motto also perfectly symbolizes the kind of relationship we aim to build with all our business partners. The customer profile articles you'll find in this issue are just some of the many stories of strong and lasting collaborations we establish with our clients, based on shared goals and values.

We also pay great attention to the relationships with our suppliers. Their contribution to the quality and reliability of our products is fundamental. In October, about 200 specialized suppliers took part in *Prima Power Supplier Day*, held at our Headquarters in Turin, to join forces for the continuous improvement of the standards of our products and the experience of our customers.

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Flexibility is Power



Laser 2D

Laser Genius | Platino Fiber | Platino

Prima Power 2D laser range features technological and automation solutions suitable to the processing of a **wide variety of materials and thicknesses**.

The laser generators available in different powers answer any production need and the "open" cabin grants to the operator excellent visibility and accessibility. Efficient and tailored for any application.

The best 2D laser technology at your service.

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in  



 Prima
Power

Laser Genius: A Smart Buy for Midwest Job Shop



Jeff Nelson, operations manager, says his decision to purchase the Laser Genius was based on the fact that after doing all the studies, and evaluating the cost of ownership, the Prima Power laser came out on top.

For the past five years, R & M Manufacturing has faced an interesting challenge. The company has experienced a strong growth cycle, and projections are even stronger for the future with such customer industries as electrical, power generation, solar, air purification, HVAC, home & building, etc. The challenge was to keep pace with the rapidly growing production requirements with two older CO₂ lasers, one of them was worn out and needed to be replaced.

The management of R & M Manufacturing made the decision to purchase a fiber laser, and obtained quotes from multiple fiber laser manufacturers. R & M evaluated the time studies, cost of ownership studies, efficiency comparisons, ease of operator usage, and programming specifications from each laser manufacturer. The company had specific needs to consider prior to purchasing the fiber laser:

- R & M needed a small footprint machine that had very large capacity to consume materials.
- Reliable automation that could run lights out was a must. The company ran only two shifts, and the fiber laser needed to run lights out every night and every weekend. The only downtime this machine would have was for scheduled maintenance downtime.
- Material thicknesses vary from 1/4" down to 20 gauge.



High-dynamic linear motors ensure a 15% increase in productivity compared with conventional drive systems. The Laser Genius has a comprehensive range of automation modules and the effective CNC proprietary management guarantees accuracy in cutting and head positioning.

"We started with six possible sources," reflects Jeff Nelson, operations manager. "We decided on the Prima Power 6kW Laser Genius with a Compact TowerServer that allows easy loading/unloading for blanks and processed sheets for lights out operation. Our decision was based on the fact that the Laser Genius is a top-of-the-line fiber laser. It is also a very high performer, and the footprint for the automation is much smaller than the competition, which suited our needs extremely well. After doing all the studies, and evaluating the cost of ownership, the Prima Power laser came out on top."

Laser Genius

Laser Genius is a high-range 2D laser cutting machine, designed for very high productivity, quality, and flexibility. Laser Genius 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). Varied thicknesses can be cut with efficiency and quality. Productivity increases particularly with thin and medium-gauge sheet metal. Because of its wide range of automation modules, the Laser Genius is the right solution for both small batches and large-scale production.

"Watching the demonstrations while the machine actually ran, and the quality of the cut, were big factors in our decision to go with the Laser Genius. Overall, the Laser Genius is the Cadillac of fiber lasers."

High-dynamic linear motors ensure a 15% increase in productivity compared with conventional drive systems. The Laser Genius has a comprehensive range of automation modules and the effective CNC proprietary management guarantees accuracy in cutting and head positioning.

"The speed of Laser Genius was absolutely another consideration," explains Nelson. "I needed to process more product at a faster rate. Watching the demonstrations while the machine actually ran, and the quality of the cut, were big factors in our decision to go with

the Laser Genius. Overall, the Laser Genius is the Cadillac of fiber lasers."

“Laser Genius has increased our efficiencies by 30%. The efficiencies that we gained from the Laser Genius reduced my ROI from five years to 3 1/2 years.”

Increased Efficiencies

“Laser Genius has increased our efficiencies by 30%,” continues Nelson. “When you are in my position you have to justify every piece of equipment. You have to do a Return on Investment (ROI). Some companies base ROI on new work they are trying to get, I did my ROI on work that was already in-house. The efficiencies that we gained from the Laser Genius reduced my ROI from five years to 3 1/2 years. The Laser Genius made us more competitive when quoting in the laser cutting market. These days, a lot of OEMs won’t even look at you unless they know you have a fiber laser with automation.”



The Compact TowerServer allows easy loading/unloading for blanks and processed sheets for lights out operation.

The Prima Power Laser Genius is a high-tech product with low operating costs, high-energy efficiency, no laser gases, and reduced maintenance. This result is obtained from Prima Power’s proven leadership in laser technology in terms of flexibility, quality, and user friendliness, and more than 2,000 flat laser machines installed worldwide.

The Laser Genius has linear motors on X and Y axes, carbon fiber carriage, synthetic granite frame – unique characteristics allowing it to maximize fiber laser technology at its best. Another feature that stands out is the proprietary hardware and software for laser process control and the high brilliance 6kW fiber laser.

The Prima Power fiber cutting head features single lens strategy, safe impact protection system, high dynamic focal axis with 35 mm stroke, lens drawer with quick alignment system (OPC), and protection glass drawer for easy inspection. These features make it an accurate, versatile, and efficient machine capable of 24/7 lights-out production.

“We are extremely happy with our purchase of the Laser Genius and also with the team at Prima Power for their professionalism and response time.”

“This machine gives us so much more flexibility and so much more capability, I don’t call it the Laser Genius...I call it the Hog,” says Nelson with a grin. “Because all this machine does is eat metal. The reliability of this machine has been phenomenal...far beyond what we expected.”

Sales & Service Support

Another factor in our decision to purchase the Laser Genius was the Prima Power sales personnel that walked us through the entire process,” explains Nelson. “They were with us from the beginning until the decision was made, and they did an exceptional job of understanding what our needs were and what we were trying to accomplish. They explained what the

Laser Genius would accomplish for us. And their assurances and time they spent reassuring us of the impeccable service levels and reliability of the machine had a major impact on our purchasing decision.

“I’ve been in this business for 27 years, and I am a realist when it comes to manufacturing equipment. I know that machines break down. I know things happen. There will be service issues. We understand that we are not the only customer of these machine manufacturers, and service can’t always come out here as soon as we call. But that being said, the responsiveness of Prima Power service and their techs have been phenomenal. I would give them a grade of A+ right now. Most everything that we have had issues with has been a training issue or operator

error, for which Prima Power has been exceptionally generous with their technical time and training. Prima Power has sent trainers out here three different times to ensure that we had our processes down and spent two weeks with our operators. We are extremely happy with our purchase of the Laser Genius and also with the team at Prima Power for their professionalism and response time.”



The Prima Power fiber cutting head features single lens strategy, safe impact protection system, high dynamic focal axis with 35 mm stroke, lens drawer with quick alignment system (OPC), and protection glass drawer for easy inspection. These features make it an accurate, versatile, and efficient machine capable of 24/7 lights-out production.

Innovation Day...Introducing New Laser Technology & Prima Additive Manufacturing

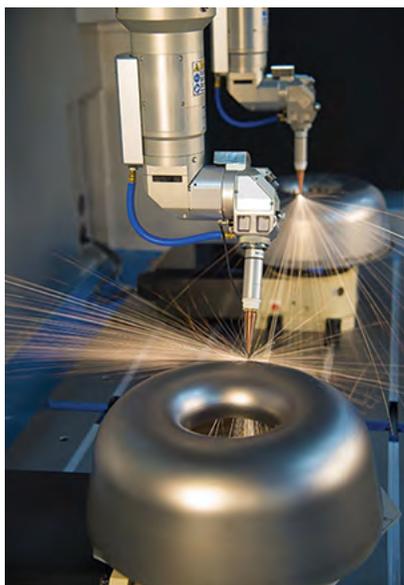
During its first Innovation Day, Prima Industrie presented the new laser-based advanced technologies and introduced the new brand Prima Additive, focusing on innovative Additive Manufacturing turnkey solutions.

On October 3, Prima Industrie hosted its first Innovation Day, with over 160 guests from 20 different countries composed of customers and prospects, universities and research centers, and a large number of international media representatives. During the event, new laser-based, application-driven technologies for the Aerospace sector were presented and demonstrated. These unique solutions will further increase, particularly for welding, the application range covered by Prima Power Laserdyne products.

Prima Industrie also introduced its new Prima Additive brand, dedicated to the design, production, and marketing of turnkey solutions for metal powder bed fusion and direct metal deposition technologies, as well as application support and global service. The introduction took place during the



Its extensive expertise and experience in laser technologies is unique in the sector and dates back to 1978, when the first 5-axis laser robot was developed. Today, Prima Industrie provides a wide product portfolio including 2D and 3D laser systems, punching and combined machines, press brakes and panel benders, and



Innovation Day event dedicated to laser-based breakthrough technologies for metal processing at the Headquarters and Tech Center in Collegno (TO).

Prima Additive becomes the third Division of the Prima Industrie Group, which includes Prima Power (laser and sheet metal working machinery) and Prima Electro (laser sources and industrial electronics). The Group has revenues of 450 m€ and over 1,800 employees worldwide.

automation systems, with over 13,000 world-wide installations. Its laser product range is one of the widest on the market, and represents over 35% of total revenues, with more than 25% realized from 3D laser systems.



With the new Prima Additive brand, Prima Industrie officially enters the innovative and fast-growing market of Additive Manufacturing for metal parts, which in 2017 was estimated at 7.3 billion dollars globally, with an average annual growth of 22% over the last few years.

The mission of the new Prima Additive Division is continuous innovation in laser for material processing, and its main commitment is advancing the industry by reducing barriers

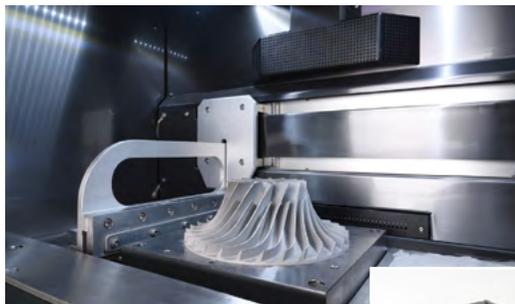


with complex geometries in such industries as aerospace, biomedical, prototyping, spare parts, casting, motorsport, and automotive. The technology principle of the DMD process is high build rate: the laser source produces thermal energy to fuse powder metal sprayed at the focal point of the laser beam, which melts the powder to the component. This process is particularly suitable for adding features to existing parts for customization, coating, and repairing in sectors such as oil & gas, tooling, casting, etc.

The new Division is becoming operative in Prima Industrie Headquarters with a group of young, highly-specialized and motivated managers and engineers, which will soon have a new home, currently under construction, close to the Headquarters. The investment for this facility is close to 6 m€ and the investments for R&D innovative activities were in a large part conceived within national and European research projects.

to entry in Additive Manufacturing. What sets the company apart on the market is a unique background of technological expertise and a full range of services for the customers, from pre-engineering and design to process optimization and configuration, part testing, and standards compliance. Prima Additive can also assist customers designing and building their prototype in its Application Center.

The Prima Additive product range will cover both Additive Manufacturing technologies: powder bed fusion (PBF) and direct metal deposition (DMD). The technology principle of PBF process is the layer-by-layer fabrication: the laser source produces thermal energy melting the powder material which then solidifies as it cools down. Layer-by-layer the part is created. This technology is mainly used for constructive parts



Commenting on the event, Gianfranco Carbonato, Prima Industrie Group President states: "I'm particularly proud to introduce the first Innovation Day, and to present this new brand, because it reinforces the pioneering spirit and the legacy of innovation of our Group. Back in the 1970s, we followed our vision and we entered the market of laser machines for industrial applications that was just at its beginning...and it was a winning choice. Today we are witnessing the development of these new applications of laser to metal working and their disruptive potential. It is a fascinating new manufacturing paradigm, and we are ready to help our customers seize these business opportunities."

Prima Power Automation: Key to Success for Italian Contract Manufacturer

By Edoardo Oldrati and Flavio Della Muzia - *Tecnologie Meccaniche*

C.M.C. Srl of Bagnolo Cremasco in the province of Cremona, Italy, a specialist in the field of metal working, has secured a strong relationship with Prima Power by acquiring an innovative Night Train FMS material management system.

Thanks to the advanced Prima Power machine inventory solution, today C.M.C. Srl is able to effectively meet the needs of the market by means of high-quality sheet metal processes with a low environmental impact.

Efficiency and Competitiveness

The main advantages of the Prima Power Night Train include:

- Increase of production capacity in reduced spaces
- Set-up time virtually eliminated
- Rapid and automatic changes from one product to another
- Lower stock and material being processed
- Increased production hours of the machine as a result of unattended operations



The Prima Power Night Train FMS material management system allows C.M.C. greater efficiency in managing materials and processes.



A Prima Power Platino Fiber laser is also a key component of the FMS system.

The Night Train FMS allows C.M.C. Srl, to make the management of the material and information of a production unit automatic by combining the individual production steps into a complete flexible process within the fabrication department. In a total area of 16,000 square meters, C.M.C. has been operating since 1981, manufacturing any type of product based on the individual needs of the customer – beginning with careful selection of the sheet metal, all the way to the fabricating performed through the use of the latest generation of automated systems. C.M.C. is equipped to handle any customer request from prototypes to small, medium, or large batches with its arsenal of CNC machines including shears, press brakes, automatic punching and laser cutting machines. Additionally, with the continuous renewal of the machine inventory and approximately 20 employees, the company is now able to assure high-quality cutting, the execution of contours or

edges in a flexible way, creating a consistent high-precision product.

Continuous Innovation

“Innovation has always been at the forefront of our company philosophy,” explains Paolo Chioda, founder and director of C.M.C. Srl. “We

have invested around 1 million € a year since 2012 to keep our production facilities efficient. In regard to environmental sustainability, which is a crucial subject for us, we have invested in photovoltaic technology that today provides us 250 kW of energy, making us fully self-sufficient during the sunniest days. We work with a large number of customers with a variety of production needs. Therefore, we have developed a time-saving order management that allows us to be extremely reactive in responding to the modern market. Our solution to providing enhanced production efficiency was acquiring the automated Night Train FMS by Prima Power.”

Prima Power is the Machinery Division of the Prima Industrie Group, with which for many years C.M.C. has undertaken a real partnership for the supply of high-performance systems, able to meet all sheet metal working needs. “By continually investing in new technology, such as punching machines with load/unload capability, allows us to market ourselves much more competitively,” continues Chioda. “Therefore the need arose for a more accurate management of the entire production process, and we decided to take the path of the Night Train FMS.”

The Night Train FMS greatly increases productivity, reduces part cost with a noticeable reduction of downtimes, allowing increased work load. The Night Train FMS stores raw material and makes it available to the laser cutting and fabricating machines as required. It can then store semi-finished parts for Work in Progress (WIP) storage that is available to the operator to complete the production cycle.

“The FMS enables a reduced material waste, significant savings of space, high efficiency, and greater quantity of finished product during machining.”



The Prima Power Night Train FMS material management system supports C.M.C. in the quick changes of production, typical of orders with reduced and frequent batches.

"In 2006, we began our collaboration with Prima Power through the installation of our first Shear Genius," says Chioda. "We understood how essential it was to shift our attention towards flexible systems, understanding in advance the need to work on the cost of the piece rather than the amount of investment. Therefore, we immediately started to evaluate the concept of an FMS storage system. From the first machine already present in the factory, on which this storage system was installed, we have moved to purchasing systems to integrate with the Night Train FMS in order to complete our production cycle."

The Right Solution

This great technological leap assured C.M.C. Srl greater efficiency and flexibility in the manufacturing of customized pieces, particularly suitable for small batches, but perfectly



C.M.C. can also count on a BCe automatic bending center by Prima Power.

adaptable even to large volumes. The concept of Prima Power's modular system also allows production, according to the specific requirements of the facility, with cells, individual machines, or work stations that can

be updated, changed, or added. "Among the many advantages of using this system, we appreciated the great product changing speed, a flow of automated information (from programming to the various reports), an integrated production system, fully automatic machining stages, and high productivity," continues Chioda. "In full agreement with our corporate strategy aimed at eco-sustainability, Prima Power machines boast a minimal environmental impact thanks to servo-electric technology, in addition to the fact that the FMS enables a reduced material waste, a significant saving of space by means of automated logistics, high efficiency, and greater quantity of finished product during machining."

"Our facility also includes a BCe automated bender, that provides precision, reliability, and very high quality in the treatment of bent surfaces."

Technological innovation inside the C.M.C. facility does not end with the installation of the FMS, but also includes the presence of a Platino Fiber laser. The machine has a series of options dedicated to different production requirements, from Smart Cut for fast laser processing of thin sheet metals (up to 5 mm)

to Max Cut for fast cutting of medium and high thickness, up to Night Cut for unmanned intensive production. The Platino is completed with an unload and sorting system with a portal robot called LST. A flexible and precise palletization allows even components cut with the 2D laser to be managed within the process flows inside the Night Train with a complete and fast traceability. The FMS Night Train system is then completed by the connection to a third machine, a combined punch/laser LPe machine with a handling robot LSR.

"Our facility also includes a BCe automated bender, that provides precision, reliability, and very high quality in the treatment of bent surfaces," says Chioda. "It allows us to easily carry out both manual loading and unloading of the BCe. "Moreover, it allows us to bend parts that cannot be easily transported by using automatic loading systems."



On the left, Paolo Chioda, founder and Director of C.M.C. Srl, with his sons Giacomo and Alfredo.

The production departments also include a Prima Power Shear Genius SGe punching and shearing center, able to provide greater production capacity, high quality, and a great cost-effectiveness ratio. "Almost all components in processed sheet metal are rectangular in shape and can be processed by means of a highly-economical method, which consists in performing punching and subsequent shearing in a single automatic process by using integrated right angle shears," concludes Chioda. "This machine adopts the latest technology and innovations to make this method efficient and reliable."

The C.M.C. machine inventory includes the eP-1030 and eP-1336 servo-electric press brakes, with an average energy consumption reduction of 70% in comparison to hydraulic machines, able to reduce setup and cycle times up to 30%, while simultaneously providing a high level of precision when repeating operations thanks to the "O"-frame structure, servo-electric drives, and a sophisticated tool system. All these systems are at the top of technology and, precisely in light of this, C.M.C. Srl is evaluating the purchase of a new machine ready for Industry 4.0, in order to project the company into the future of industrial production.

This article was translated and reprinted with approval from the October 2018 issue of Tecnologie Meccaniche magazine, Italy.

Punch/Laser – the Perfect Recipe for Commercial Kitchen Manufacturer

Commercial kitchens from Volta Edelstahl stand for first-class quality, ease of use, and longevity over generations. In order to continue to offer stainless steel production of the highest standard in the future, the company located in the Vorarlberg region has been using a Prima Power punch/laser cutting cell since the beginning of the year to provide a fully-automated, flexible production solution that is particularly convincing in terms of quality and speed.

By Eng. Norbert Novotny / BLECHTECHNIK

Volta Edelstahl GmbH is a producer of commercial kitchens, buffet systems, custom stoves, free-flow, and self-service systems for all culinary providers, such as restaurants, hotels, and company canteens. “We custom design, plan, and manufacture each project, which means that it is tailored to the specific needs of the customer,” explains Eng. Lorenz Reindl MA, Volta’s general manager.

Volta relies on a production of 100 percent stainless steel. “In order to maintain the aesthetics of the kitchen furniture for a long time, there is actually no alternative to commercial kitchen construction for cleaning-friendly and low maintenance stainless steel,” says Reindl. However, today in order to prevail on its main market Austria, Switzerland, and Germany against competitors, especially from Eastern Europe, one must offer not only top quality and good service, but also extremely short delivery times.

“Except for merchandise such as induction hobs or grill plates, we manufacture all stainless steel components in-house – from cabinet substructures and wall units to cooling units, heat wells, and heating cabinets,” emphasizes Reindl. “This high level of vertical integration gives us the flexibility we need to beat the competition in terms of delivery times. In addition to a comprehensive in-house production, ultramodern machinery is indispensable. For this reason at the beginning of March, we replaced an outdated machine with a new punch/laser production solution from Prima Power.”

Fiber Laser and Servo-Electric Punching Technology

“Last year we researched the market leaders for suitable machines,” recalls Reindl. “It became clear that the punch/laser combination would meet our needs due to the various sheet metal operations requiring processing of stainless steel sheets up to a thickness of five millimeter and a length of four meters that can be processed fully automatically even in unmanned shifts,” recalls Reindl. Other requirements of the commercial kitchen builder were energy efficiency and the use of future-proof technologies.



Volta Edelstahl kitchen products can be combined into a variety of total solutions. Every detail of the stainless steel components meets the highest technical and hygienic standards and has proven itself in practice for decades with the most diverse requirements. The products include substructures, wall units, bain-maries, work tables, stoves, refrigeration units, warming cabinets, etc.

In the end, the Combi Genius punch/laser cutting cell from Prima Power with fiber laser and servo-electric punching technology prevailed. “Due to the relatively high maintenance and repair costs associated with hydraulic punching technology, only a servo-electric solution was an option for us,” says Reindl.

Reliable Laser Cutting

The Easy Cover protection system ensures the required safety. “It surrounds the entire system and protects the environment from possible stray radiation of the fiber laser, but still allows the user to perform manual loading, unloading, and maintenance work,” says Michael Pröll, area manager, Austria, for Prima Power.

As a laser beam source, Volta uses a fiber resonator with 3kW. To ensure excellent and reliable cutting performance, the machine has numerous safety systems. “The lens protection glass LPW prevents, for example, cutting dust and dirt from getting on the lens. The Laser Process Monitor LPM tracks the cutting process and enables a restart if required. In addition, the lens condition sensor, LCS, checks the condition of the lens and notifies the operator in the event of a pending lens change,” notes Pröll.

High Performance Punching

When punching, a flexible turret concept with 16 rotatable tool stations enables up to 384 tools or 128 rotatable tools to be available simultaneously in the turret. An intelligent plunger has a rotating impact head, which considerably shortens tool change times.

“The tool concept from Prima Power is very flexible and time-saving – there are no additional stops for tool changes, or setup. Each of our approximately 60 tools in the turret can be rotated in any direction and can be used immediately,” says Reindl.

Smart Loading and Unloading

According to Reindl, the automated loading and unloading of the flexible manufacturing cell, which was purchased with a total of two raw material tables and two finished-material tables including skeleton disposal, was excellently resolved. The loading, unloading, and stacking robot LSR equips the machine with metal sheets and stacks the finished parts without any scratches. "With a cycle time/parallel loading time of 14 seconds, we have the fastest loading on the market," says Pröll.

While the skeleton is disposed of via a rolling table, the LSR retrieves a metal sheet in parallel and supplies the machine with material again. "This allows us to drive unmanned shifts without any problem," confirms Reindl from practical experience. In addition to fully-automatic loading, the machine can also be manually loaded with metal sheets up to five meters.

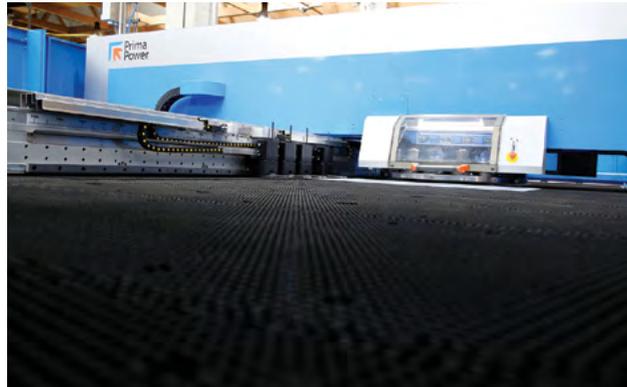
For quick-turnaround parts up to 1,200 x 800 mm, there is a part flap available. From this, the parts are transported by conveyor belt to the side of the machine and can be manually removed there.

"With the investment in machinery, we are now more than twice as fast. With the resulting increase in capacity, we are prepared for the future and even able to accept contract manufacturing orders."

Everything Done Right

Ultimately, Volta was able to significantly improve part quality and massively increase part production with the new production solution. "With the investment in machinery, we are now more than twice as fast. With the resulting increase in capacity, we are prepared for the future and even able to accept contract manufacturing orders," says Reindl. "The training of our programmers and machine operators was excellent, especially in connection with the great potential of our already deployed Wicam software on the new machine. Retrospectively, one thing is clear for Reindl: "In our range of applications, namely stainless steel processing up to five millimeters, the new punch/laser cutting cell from Prima Power is the ideal solution...it would be our first choice today."

This article was translated and reprinted with permission from BLECHTECHNIK magazine.



The Combi Genius from Prima Power combines the advantages of servo-electric punching technology with state-of-the-art fiber laser cutting.

Since the beginning of the year, Volta Edelstahl has been using a new punch/laser cutting cell for a fully automatic, flexible production solution.



A flexible turret concept with 16 rotating tool stations allows up to 384 tools or 128 rotating tools to be available in the turret at the same time.

The controller has two screens. The cameras mounted in the cell make it easy to monitor the entire punching and laser cutting process.



EuroBLECH 2018...Focused on Digital Manufacturing & Technologies

The 25th International Sheet Metal Working Technology Exhibition, EuroBLECH 2018 (Hannover, 23-26 October) registered positive results with a total of 56,301 visitors from around the world. This edition of the biennial international show was particularly successful for Prima Power: over 2,000 visitors were registered at our stand and many more were attracted by our highly-effective booth focused on digital manufacturing and technologies.

Our presence at EuroBLECH 2018 was perfectly in line with the official motto of the exhibition: *Step into the digital reality*. All innovations that were showcased in the 1400 m² stand are designed for digital manufacturing and are the perfect combination of technologies and the software for automated production.

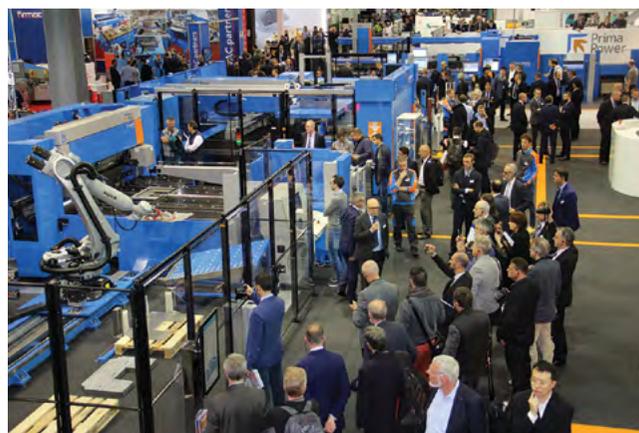
Prima Power products can be combined in many ways to create the best solution for the specific needs of each customer. For this reason, to symbolize the great combinability and modularity of its product range, the Group has chosen the Tangram, the ancient Chinese game consisting of seven pieces generating infinite combinations of forms, from the simplest to the most complex. As in the Tangram, Prima Power standard product modules generate an infinite combination of highly-specialized solutions. The connectivity between product modules and the perfect operation of the different combinations is made possible by the software. Industry 4.0 software solutions allow the communication among the parts and the efficient integration of each combination with the factory where it is inserted – in a Tangram 4.0 where the wisdom of the ancient game comes together with the most advanced digital technologies.

Digital reality played a leading role in the Prima Power stand, which was designed to let visitors live a new and engaging experience through a unique mix of real and digital worlds.

Highly-realistic VR simulations completed the real demonstrations on exhibited products, allowing visitors to live an immersive journey to discover all capabilities and benefits of the most advanced laser and sheet metal technologies.

Many innovations were showcased by Prima Power in Hannover. The new integrated robotic bending system with a BCe Smart panel bender and an eP-0520 press brake, was presented as world premiere. Also, the solutions of The Laser line are new products exhibited for the first time at a trade show: the new 3D fiber laser system Laser Next 2141, with its wide working envelope and its different configurations, and the 2D fiber laser cutting machine Laser Genius 1530, with the automatic stacking robot LST and the Combo Tower storage. The punch/fiber laser cutting system Combi Genius 1530 is presented with a new solution which simplifies the installation and the maintenance of the machine and with the loading/unloading system Compact Express. The flexible manufacturing line PSBB – Punching, Shearing, Buffering, Bending – with the PCD (Picking & Centering Device) system processes blank sheets from an automatic storage system into ready-bent, high-quality components automatically.

The perfect combination of technologies that is at the base of Prima Power solutions is made possible through the smart software family which connects machines, monitors the entire production flow, and generates automatic processes from the order to the delivery. All products are Industry 4.0 Inside and set new industrial standards for efficiency and process reliability.



FABTECH 2018

Atlanta, Nov. 6-8

North America's largest metal forming, fabricating, welding, and finishing event welcomed more than 1,500 exhibiting companies and a total of 33,755 attendees from 75 countries to Atlanta's Georgia World Congress Center last November 6-8 to celebrate manufacturing at its best. With more than 650,000 net square feet of exhibit space, FABTECH offered visitors the chance to network, learn, and explore three exhibit halls full of new products, technology, and the latest manufacturing innovations.

Visitors to Prima Power North America's booth discovered the latest product innovations, news about *Industry 4.0*, and the new concept of the *smart factory*. And with the help of Prima Power's *Wall to Greater Productivity* – a 98" interactive video wall – Prima Power presented the latest technology in laser cutting, bending, and punching.

Featured Prima Power machines included: Platino Fiber Evo – an updated version of its Platino Fiber, one of the company's most popular products with more than 2,000 installations worldwide. The 2D laser cutting machine has been upgraded with important technological innovations that



increase its speed, reliability, and productivity. The Platino Fiber Evo is equipped with fiber laser sources of 2, 3, 4, and 6kW power that provide the customer with high performance and great reliability.

BCe Smart – The machines of today must be increasingly smart and productive. Ease of use, ergonomics, flexibility, active safety, and reliability are the key requirements to face the new challenges that the market imposes. The BCe Smart 2220 is the new panel bending machine by Prima Power which perfectly meets these requirements with simple but innovative and smart solutions. BCe Smart is very flexible and is also ideal for producing small volumes, kits of components, and individual parts with high-quality bending and high repeatability.

Rounding out the machines on display was the always popular Prima Power servo-electric eP press brake.



MWCS 2018 Shanghai, Sept. 19-23

For the fourth consecutive year, Prima Power China has joined the Metalworking and CNC Machine Tool Show (MWCS), one of the most representative machine tool exhibitions in China, which seeks to look into the future and introduce the most current and relevant technologies from both foreign and local companies to the fast-changing Asian market.



Our visitors were welcomed to our booth with a cup of nice Italian coffee, and invited to learn not only about the machines installed on site, but also about the products brought to them through our virtual reality station: an entertaining opportunity to virtually travel through a production line, zoom into the most important components, and get a bird's-eye view of the entire system.

Combi Sharp

This year the event carried a special meaning for our company, as the exhibition was the stage of a new product launch: Combi Sharp, the brand-new punch/laser machine designed and produced in our Finnish plant, which was presented to the attendees along with different demonstrations and machine applications.



The Combi Sharp is designed to meet the needs of manufacturers who require both laser cutting and forming on thin metal sheets and would like to step up to the next level after stand-alone punching. Automated with the Compact Express loading and unloading device, Combi Sharp provides more features, capacity, and performance. The open structure, availability of a wide range of special tools, and easy and fast setup change, are all combined with a very affordable price.

BCe Smart, eP-1030

In addition to the world premiere of the Combi Sharp, our booth showcased two other machines: BCe Smart Bending Center and eP-1030 press brake.

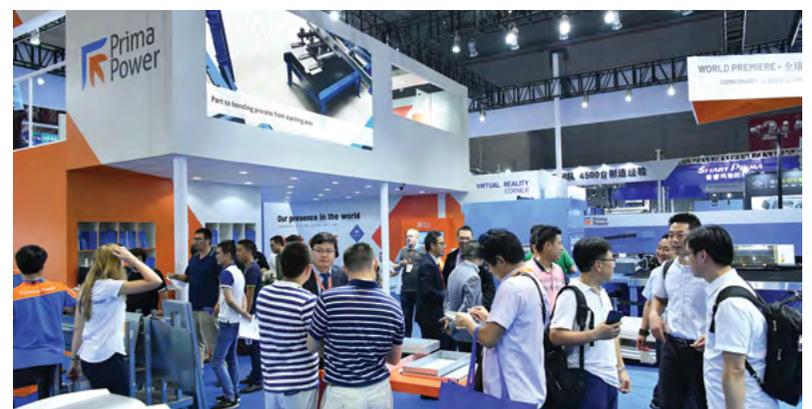
BCe Smart, one of our signature products in China, has already been installed in more than 15 premium enterprises around the country since its launch in 2016, and it keeps attracting the

attention of other potential customers from the electric cabinet industry, steel doors and frames, and F&B equipment sectors. Our eP-1030 Press Brake featured a special configuration, Prima Power AQ Bending Follower, an innovative device able to facilitate the correct positioning of big parts, which can be managed by a single operator.



See you in September 2019!

Prima Power Suzhou is thankful to all the local and headquartered teams that have worked together to deliver one more successful event, and to all the visitors who have stopped by our booth and learned about our newest technology. Looking forward to seeing all of you next year!



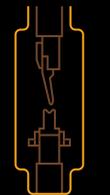
Reliability is Power



eP Series Press Brake

| eP 0520 | eP 1030 | eP 1336 | eP 2040

Prima Power provides a **unique range of servo-electric press brakes** in 4 models, with different press tonnage and bending length, to meet **any production requirement**.
With the innovative **pulley-belt system** that **distributes the bending force** over the entire bending length and the exclusive **O-frame** that **ensures tool alignment** even under stress deformation, the servo-electric eP Series press brake is **faster, more accurate, more productive** and has an **outstanding level of reliability**.



O-frame



www.primapower.com



Platino Fiber Laser & Tower Clear the Air for Higher Productivity at Ventilation Manufacturer

Soler & Palau (S&P) Ventilation Group is the world's leading fan manufacturer. The company offers a wide range of ventilation products benefiting from over 60 years of experience within the industry. S&P's impressive, long-term growth is the result of one simple philosophy – develop an air-moving product that effectively and efficiently meets the needs of the customer, supported by unparalleled engineering, distribution, and service.

S&P USA operations are based in Jacksonville, Florida. This geographically strategic location allows the shipment of products throughout the U.S. and Canada, as well as exports. The Jacksonville manufacturing and distribution facilities combine to make up more than 150,000 square feet of space for a comprehensive range of products. S&P also has facilities in Wisconsin and Ontario, Canada.

“The S&P Jacksonville facility manufactures commercial and industrial fans,” explains Chuck Muns, manufacturing engineer supervisor. “We mainly produce centrifugal fans like you see on top of restaurants and propeller fans that are found in warehouses and other industrial buildings. We also make some residential products such as air intake fans and air filter boxes.”



The Platino Fiber laser can be used to cut a wide range of materials. It cuts various thicknesses, up to 20 mm of mild steel, with efficiency and quality. Productivity increases particularly with thin and medium-gauge sheet metal.

Several years ago, the Jacksonville plant began a search for additional machinery to increase capacity. At the time, the fab shop consisted of a few older punch presses, press brakes, and a wide assortment of metal spinning machines, both manual



Chuck Muns, manufacturing engineer supervisor (left) and Ogun Unal, manufacturing & mechanical engineer, inspect parts produced on the Platino Fiber laser.

and automatic, a few lathes, and welding equipment. “Because of the age of the punch presses, we had to do something to increase the amount and quality of cutting the sheet metal,” continues Muns. “Initially, the company was looking for CO₂ lasers, but we soon realized the benefits of the fiber lasers. After much research, we purchased the Prima Power 4kW Platino Fiber laser with a 15-shelf Compact Tower in September of 2016.”

Platino Fiber Laser

The Platino Fiber laser cutting machine is the perfect balance of innovation and experience. This

product combines state-of-the-art efficient and ecological fiber laser technology, with the proven reliability and flexibility of the Platino platform.

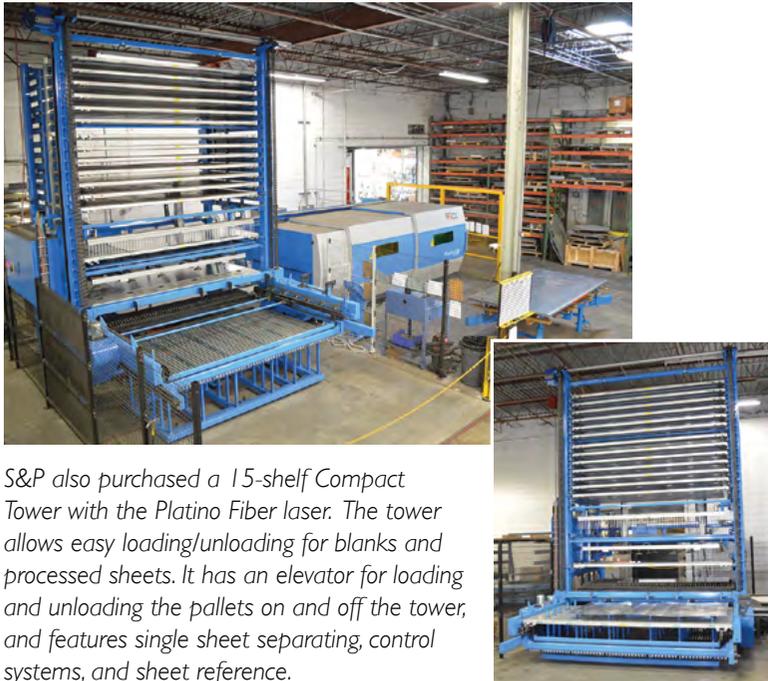
“Without the Platino Fiber laser and tower, we would not have been able to keep up with that increased work load.”

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.

“A major reason for choosing the Prima Power Platino Fiber laser was its cantilever design,” says Muns. “All the other lasers were gantry design. We have many cases where we process oversized sheets by cutting one half and then flipping it around and picking up reference points and cutting the other half. And that was one of the deciding factors in choosing the Prima Power cantilever design.”

Eliminating Secondary Operations

“The Platino Fiber laser also removed all the secondary operations that we had to do with the punch presses,” adds Ogun Unal, manufacturing & mechanical engineer. “Because of the micro joints used with the punch presses, it took up valuable time to remove the parts from the sheets. With the laser, we can modify the micro joint thicknesses that saves us a lot of time. We also took advantage of the nesting to utilize more of the sheet and we used some functions like common-line cutting that left no burr that had to be removed.”



S&P also purchased a 15-shelf Compact Tower with the Platino Fiber laser. The tower allows easy loading/unloading for blanks and processed sheets. It has an elevator for loading and unloading the pallets on and off the tower, and features single sheet separating, control systems, and sheet reference.

“Before the laser, in order to produce the vanes for the centrifugal fans, we would shear a strip, run it through a blank die, and then run it through the form die,” adds Muns. “Now all we have to do is cut the blanks with the laser and run it through the form dies. We’ve eliminated all those different operations, which of course go right to the bottom line. The same is true with our propeller blades which we originally outsourced. We would get these blanked and go through a forming operation and then a piercing operation. Now we just laser cut the blanks with the holes in them and then form them...and we’re done. We’ve eliminated a lot of die operations.”

Flexible Automation

S&P also purchased a 15-shelf Compact Tower with the Platino Fiber laser. The tower allows easy loading/unloading for blanks and processed sheets. It has an elevator for loading and unloading the pallets on and off the tower, and features single sheet separating, control systems, and sheet reference.

The Platino Fiber is particularly suitable for lights-out operation, often performed in unattended mode. It is a fully independent machine, with no need for manual intervention during machine operation. Once the production schedule is programmed, the Platino Fiber laser takes care of the necessary settings, tip replacement, sheet change and storage, etc.

“As we adapted to automation, instead of just running the laser first and second shifts, we were able to program the laser to run lights out because of the tower.”

Lights Out Production

“As we adapted to automation, instead of just running the laser first and second shifts, we were able to program the laser to run *lights out* because of the tower,” says Unal. “We can load whatever material we need. The Tower has a 3-point measure function. It finds the location of the sheet. It is a computerized system and we can use remote control software to keep track of production. We also have an automatic nozzle changer. We load whatever we need into the tower, and based on the priority of the part, the laser just changes the nozzles for each part. We also keep a great amount of work in progress (WIP) in the tower. The tower lets us hold these sheets until we need them.

Increased Productivity

The Platino Fiber laser and tower also increased productivity at S&P. “In July of 2017, we were running 1,700 sheets per month,” says Muns. “By July 2018, we ran 3,400 sheets per month. S&P corporate rates each plant that does fabrication on sheet utilization. The Platino Fiber laser and tower took us from third or fourth within the entire company up to the top spot on sheet utilization.”

“During each month of 2018, we have exceeded our laser production expectations,” adds Unal. “Without the Platino Fiber laser and tower, we would not have been able to keep up with that increased work load. The Prima Power laser is a crucial part of our production line. Everything starts from the fabrication department...and the fabrication department starts from the laser.”

Customer Service

Prima Power management has kept their promise on service,” concludes Unal. “Their service technicians and application engineers have helped us a immensely. If they can’t fix something on the phone, there is a service tech on a plane immediately.”



S&P is the world’s leading fan manufacturer. The company offers a wide range of ventilation products benefiting from over 60 years of experience within the industry.



Prima Power Automation Helps Chinese Manufacturer Meet Expansion Goals

Polygee, founded in 2004 and based in Zhangjiagang (Jiangsu province), is a leader in the production of commercial oil fumes purifiers, equipment with self-suction and vortex plates, used in various kinds of environments such as professional kitchens, job shops, and factories. Prima Power had the pleasure to visit with Zhen Qing Qian, founder and major shareholder of the company, who shared with us his vision for the future of Polygee in the next decade.

“We run on large production and need equipment that is able to keep up with our orders. That’s why the EBe was the best bet for us.”

Polygee purchased a Prima Power EBe Express Bender in July 2015, and leverages its functions to bend the hard case components of the purifiers, working three shifts, seven days a week. “We do not need a machine that switches from model to model,” explains Qian. “We need a machine that is able to produce the same kind of high-quality output, running on the fastest possible speed, and maintaining a stable rhythm. We run on large production and need equipment that is able to keep up with our orders. That’s why the EBe was the best bet for us.”



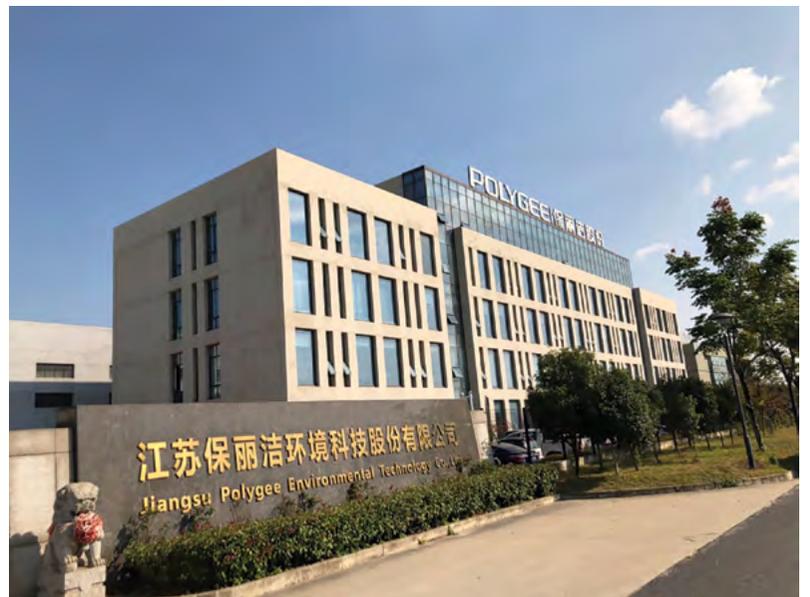
The EBe servo-electric panel bender is a bending solution that is designed specifically for each fabricator’s production requirements to achieve maximum productivity, quality, and repeatability.

The plant in Zhangjiagang features multiple buildings and currently operates equipment of different levels, from both local and international suppliers. “What we do appreciate about Prima Power equipment compared to competitors is the machine’s ability to save energy and the stability of the high-production speed,” continues Qian. “Our other bending machines, in the best cases, can only work up to 70-80% of EBe’s performance.”



The 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, programming, and rigid construction.

“What we do appreciate about Prima Power equipment compared to competitors is the machine’s ability to save energy and the stability of the high-production speed.”



Polygee was founded in 2004 and is based in Zhangjiagang (Jiangsu province) China.



Zhen Qing Qian (left), founder and major shareholder of Polygee explains his company's future plans with Frank Fan, sales director for Prima Power Suzhou.

100,000 RMB per year, and it's going to be increasing. With automation we can reduce annual labor cost, so the investment is totally justified in the long run and we are not afraid to take the next step."

Polygee plans to go public in the near future on the Chinese stock market, which has been a very popular trend among local enterprises that have experienced a constant growth since the beginning of the millennium. (According to a recent PwC report, the number of IPOs in Greater China increased significantly from 378 in 2016 to 631 in 2017).



Polygee is a leader in the production of commercial oil fumes purifiers, equipment with self-suction and vortex plates, used in various kinds of environments such as professional kitchens, job shops, and factories.

"IPO is currently one of the main goals for us and for many successful large enterprises in China," concludes Qian. "Going public helps to secure the steady support of the government, which is becoming stricter and stricter regarding private companies' regulations. It also represents a guarantee to our customers that our business is established and has sufficient resources to keep growing in numbers and output quality. Moreover, many remarkable companies in China have been founded recently by a single man, or a handful of dynamic young entrepreneurs who were able to grow the business very quickly, nurtured by the fast-growing economy that China has experienced. I want to ensure that our enterprise has a more systematic and long-term structure, in order to maintain its leadership position for many years to come."

Prima Power is proud to be Polygee's supplier and we are working with their purchasing and engineering teams to help them step up to the next level.

Following both its own growth and the common Chinese trend towards automation, Polygee is planning to invest next year towards a substantial upgrade of the current equipment, and Prima Power is ready to propose a comprehensive solution plan that involves a fully-automated production line and Industry 4.0 software implementation. "We are going to automate our production process as much as possible by purchasing a production line to place in our 200 m long plant and connecting the stand-alone machines we currently have," says Qian. "As we work towards the smart factory concept, we want our equipment to be as mono-brand as possible. We aim at engaging one supplier that can be our partner and guide us through the Industry 4.0 transformation. In our province (Suzhou industrial area) the cost of a worker is around



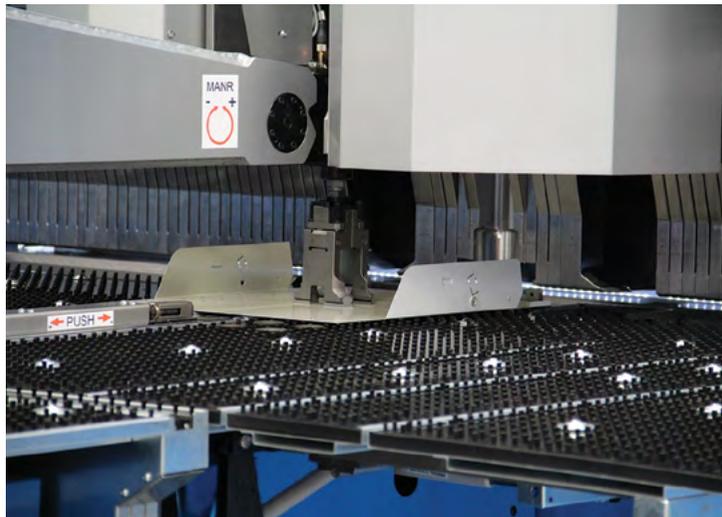
The EBe is available in models with a bending length of up to 149" (3,800 mm) and an opening height of 8" (204 mm).

Innovative Integration of the Press Brake & Panel Bender

by Davide Davò, TecnoLamiera

During EuroBlech, Prima Power presented the world premiere of the new integrated robotic bending system that provides a different perspective on the automated bending process.

In the industrial sector, the word *innovation* is frequently associated with the introduction of a completely new technology that achieves performances which were previously impossible. In recent years, however, with the evolution of digital technologies and a different approach to production, the meaning of *innovation* has slightly changed. Today, it is possible to innovate by using consolidated and reliable technologies in a completely new way. In line with this philosophy, Prima Power has developed an integrated robotic bending system that provides a new interpretation of the concept of automation combined with sheet metal forming, capable of overcoming the idea that robotic solutions require high production in order to be efficient.



makes a difference, typically representing a critical element for robotic solutions.”

“Since all programming is performed at the office, the operator is facilitated in carrying out his activities, since he can only check the onboard programming and focus on bending operations,” adds Fabio Farina, Prima Power Press Brake Product Manager. “By using offline programming, we increase the digitization level of the bending phase, aligning it with

other sheet metal machining technologies, integrating it even more into the company’s production system, and following the evolution of the processes traced by Industry 4.0.”

Four Different Modes

In addition to the introduction of a powerful and efficient solution for offline programming, one of the cornerstones of this project is the multiple ways in which the entire system can be used. Depending on the characteristics of the part and the batch size, the system can be used in its most complete form with the panel bender and press brake that operate in series interlocked with the robot up to the fully-manual operation, which does not depend on the two machines.

“In the integrated mode, the cycle begins with the robot that picks up the sheet metal (maximum dimension 2,850 mm, thickness 2.5 mm, and weight 85 kg) and places it in the panel bender loading area,” continues De Rossi. “While the BCe Smart performs the bending sequence set by the program, the robot picks up the piece previously bent from the machine and places it in the unloading area. It then takes the part to the press brake to complete the component by performing specific operations, such as bends in internal windows, or partial bends of the outer edges, whose position cannot be reached by the panel bender tools. In this case, the robot is then used to interlock the two machines and optimize the cycles.”

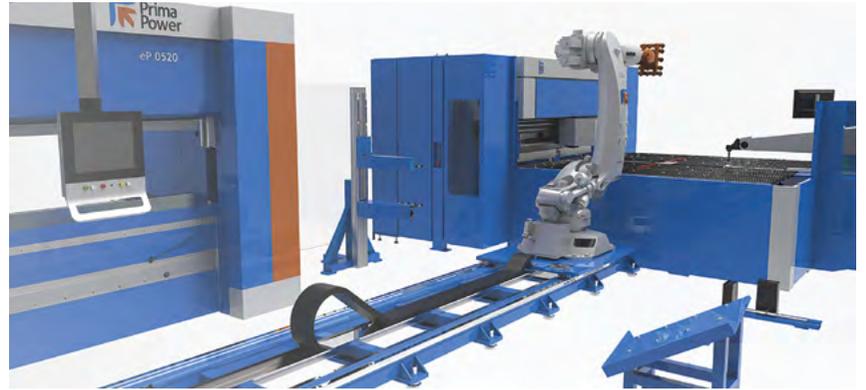
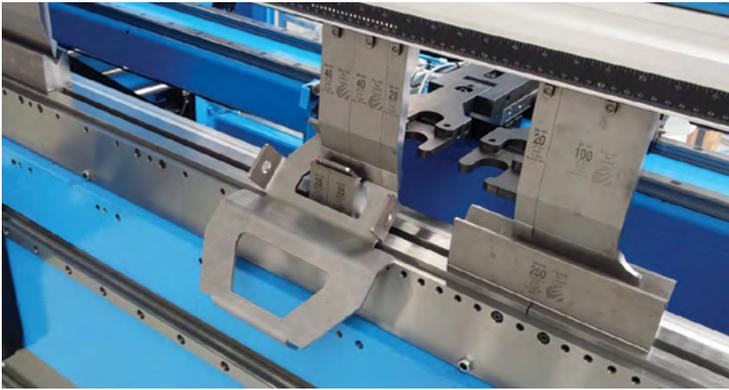
If, on the other hand, the application requires bends that can be entirely performed on the panel bender, the BCe Smart can operate automatically with the loading and unloading operations carried out by the robot while the eP-0520 press brake goes into stand-by mode. “Since our goal is to make this system efficient with batches of any size, we have also implemented a mixed operating mode,” adds Farina. “In this case, the two machines process different batches. Specifically, the panel bender is dedicated to small batches and the loading/



The system developed by Prima Power consists of a BCe Smart panel bender, an eP-0520 press brake, and an anthropomorphic robot mounted on a 7th axis.

Offline Programming

This system consists of a BCe Smart bending cell, an eP-0520 press brake, and an anthropomorphic robot mounted on a 7th axis. A series of support elements can be added to these three main components, such as a sheet separator for the sheet metal stacks to be machined, a centering table, and a tilting device for the sheet to be bent or the component to be stacked. “The technologies included in this system, even in their most recent evolutions, can be still considered known and consolidated,” explains Roberto De Rossi, Prima Power’s Thin Sheet Metal Business Development Manager. “At a conceptual level, the true innovation is represented by the option of using automation in different ways, by optimizing operation of the entire cell according to the type of batches to be produced. On the practical level, it is the offline programming software which



On the left: the eP-0520 press brake can operate with the robot or in manual mode.

On the right: the real distinguishing feature of the Prima Power solution is represented by the different possible operating modes.

unloading operations are carried out by the operator, while the robot exclusively interacts with the press brake for medium to large batches.”

These three operating modes are always focused on finding the best way to use the robot. However, there are some situations in which this tool is not able to contribute in a significant manner, potentially becoming difficult to manage under certain situations. Prima Power has thought of this as well, by implementing a mode in which the robot remains in stand-by while the panel bender and the press brake make small batches different from each other under the direct management of the operator. With these four different usage modes, the new integrated robotic bending system is able to emphasize the advantages derived from the use of the two machining technologies for each volume and type of production, both in their independent use from each other and in their integrated use.

Applications in All Sectors

The great versatility of this solution allows it to be applied in practically any industrial sector, precisely because of its ability to adapt to batches of any size, always assuring optimal operation. “This is a system that perfectly matches with companies that operate as subcontractors, and therefore, have a production characterized by non-constant volumes and pieces with always different geometries,” says De Rossi. “In regard to the application sectors, the production of kitchen hoods is the perfect example of a situation in which the integrated system assures maximum competitive advantage.”

Kitchen hoods are in fact elements characterized by internal bends and bends which the panel bender alone would not be able to complete. On the other hand, executing these parts with press brake bending only would still require a large amount of time. The union of these two technologies enables all-parts machining within a single production system, maintaining high

productivity and keeping costs to a minimum. “Our new system perfectly matches with the applications that the panel bender alone or the press brake alone would be able to carry out in an inefficient manner, or that cannot be achieved by using only one of these two technologies,” says Farina. “All this is completed by the further advantage derived from the fact that the process can be fully automated, thus assuring constant product quality.”

“What we are presenting with this project is, above all, an approach, rather than a technical aspect,” concludes De Rossi. “Within the system, everything can be customized according to customer needs. The size of the press and of the robot, the tools and systems supplied are evaluated each time according to two aspects: the autonomy desired by the customer, i.e., how often the operator must intervene to supply or unload the line; the other is the level of automation required – for example, in regard to the implementation of automatic tool changing systems. The choice of providing extreme customization aligns with the idea behind this project, namely achieving the best operating condition in any field of application.”

This article was translated and reprinted with approval from the September/October issue of TecnoLamiera, Italy

Some examples of the part and types of bending that can be achieved with the Prima Power system.



LPe6f Provides Speed, Flexibility & Higher Productivity to Pacific Northwest Contract Manufacturer

P&A Metal Fab, Inc., Clackamas, OR, has been an impressive success story in the Pacific Northwest for decades. According to industry observers, the company has a winning business philosophy that is very straightforward: To provide everything a customer needs, charge a fair price, and deliver the job on time...every time. This dedication to service and quality helps to explain the deep loyalty among customers and employees — many of whom have worked for the company 20+ years.

Dan Aronson is P&A Metal Fab's president. Aronson's father, Phil, started the company in 1978 out of a two-car garage a few blocks from its present location. "By 1991, the company grew into a fair-sized business," explains Dan Aronson. However, by that time, Phil Aronson was approaching retirement and later that year he sold the company to the Kyoshin Giken Company based in Japan. His son Dan stayed on in senior management and later in 2007, he and another Japanese entity, Tsuguaki Takahashi, purchased the company and formed a new trans-Pacific partnership that offers the partners greater reach and new opportunities.

Today, the company has evolved into a contract manufacturing powerhouse with 90 employees, working in three facilities with over 75,000-square-feet of space. P&A Metal Fab has also acquired an arsenal of laser cutting, fabricating, tube processing, welding, and powder coating to service its diverse customer base including: air handling equipment, industrial and consumer products, such as computer furniture, all-terrain vehicles, and a global leader in fitness equipment.

Staying up to date with the leading manufacturing technology has also been a long-term goal of P&A Metal Fab. When the company decided to replace its older model laser/punch combination machine, Aronson put together a team of four employees to research the sheet metal fabrication market to find a replacement. After talking to several machine builders, industry experts, and other fabricators, P&A Metal Fab purchased the Prima Power LPe6f laser/punch combination machine that was installed in August, 2016.

Prima Power LPe6f

The LPe6f series combines high-end servo-electric punching and state-of-the-art fiber laser technology in a manufacturing



The LPe6f series combines high-end, servo-electric punching and state-of-the-art fiber laser technology in a manufacturing solution that provides outstanding flexibility, speed, accuracy, and productivity to fabricate the most challenging products.



After talking to several machine builders, industry experts, and other fabricators, Dan Aronson, president of P&A Metal Fab, Inc., and his research team purchased the Prima Power LPe6f laser/punch combination machine that was installed in August, 2016.

solution that provides outstanding flexibility, speed, accuracy, and productivity to fabricate the most challenging products.

The inherent benefit of integrated punching and laser cutting is high versatility. You can use the turret punch press where it is easier or faster and the laser where it is most flexible. Depending on the manufacturing task at hand, you can always choose the most productive manufacturing method. This amounts to flexibility for fulfilling varying requirements, cost-efficiency, and competitiveness.

The Prima Power LPe6f series features a modern fiber laser source with low-energy consumption and the need for laser gases is eliminated. The LPe6f is a perfect example of the Prima Power Green Means® philosophy.

High-Performance Servo-Electric Punching

The high-end premium series turret punch press of the LPe6f has properties such as automatic tool length measurement, optimization of stroke length, and easy adjustment of the punching stroke. These combined with others, add up to faster set-ups and more ease of operation. The punching speed, tool rotations, and tool change time are improved. The punching stroke is NC-controlled, providing high-performance punching, and excellent forming capabilities. "The speed of the servo-electric punching is so much faster," says Aronson. "There is also less maintenance than the older hydraulic model. In addition, the servo-electric operation has lowered our power consumption by approximately one-third. The forming station has also been a really good tool for us in that machine. It allows us to perform a great deal of upforming, extruding, and tapping, eliminating costly secondary operations."

Fiber Laser Cutting

The laser used in the system, as its most flexible tool, is a 4kW high-brilliance fiber laser. Cutting speed increases in proportion to power. A totally closed-cabin design for eye safety and noise reduction is always included with the system.



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practically and can also serve as intermediate storage for ready components and as a buffer.

Cutting with Nitrogen

“Our largest customer is in the fitness equipment industry and mandates that if we cut with CO₂, all traces of the laser oxide edge must be either mechanically or chemically removed,” explains Aronson. “In order to avoid this costly secondary step, we switched to nitrogen and no longer have to be concerned with the laser oxide edge. To minimize the cost, we installed a nitrogen generator that has an 18 month payback.”



Combo FMS Double-Sided Storage is a flexible material system with the compact COMBO storage as a key module in automating the material flow. It makes different materials available at the working point quickly and practically and can also serve as intermediate storage for ready components and as a buffer.

With the integrated fiber laser a wide range of material can be cut, such as copper or brass. A significant reduction in operating cost is achieved because the laser has no maintenance requirements, no laser gas is needed, and energy consumption is far smaller compared with other solutions.

Combo FMS Double-Sided Storage

COMBO FMS[®] is a flexible material system with the compact COMBO storage as a key module in automating the material flow. It makes different materials available at the working point quickly and

practically and can also serve as intermediate storage for ready components and as a buffer.

The Combo storage allows processing of components from a variety of materials, which can be changed, as programmed, automatically. The sheets are automatically transferred into machines and cells of the system. “The Combo FMS Double-Sided Storage provides us with 17 cassettes,” explains Aronson. “We have 12 cassettes for raw material and 5 for parts.”

Loading and Stacking Robot (LSR)

P&A Metal Fab chose the high-performance portal type loading and stacking robot LSR to be integrated with its LPe6f. The LSR provides a reliable, fully-automatic process from loading to picking of parts and stacking them. Skeletons are unloaded with the unloading device. The operator is free for other tasks while machine productivity and utilization increases dramatically.

“On our old punch/laser, the process took 45 minutes and the end product was non-sorted, micro-joint parts. On the Prima Power LPe6f, the process takes 15 minutes...and the parts are sorted.”



P&A Metal Fab chose the high-performance portal type loading and stacking robot LSR to be integrated with its LPe6f. The LSR provides a reliable, fully-automatic process from loading to picking of parts and stacking them.

end product was non-sorted, micro-joint parts. On the Prima Power LPe6f, the process takes 15 minutes...and the parts are sorted. I don't need to have an employee standing there sorting 100 sheets of parts that will take him a day or two to complete. We believe that we made the right decision in purchasing the LPe6f. This is the right tool for us. We are getting a great benefit from having the parts being sorted, that really reduces our secondary sorting labor.”

Increased Productivity

“We have a project for a customer in the gaming industry where we run four sets of parts on a sheet,” concludes Aronson. “On our old punch/laser, the process took 45 minutes and the

LASERDYNE Provides Fast & Precise Laser Bevel Cutting Of Titanium

With a claim of being the most compact, lightest, and safest folding bike yet, Helix Bikes, Toronto, ON, utilizes innovative manufacturing processes that make its unique design possible.



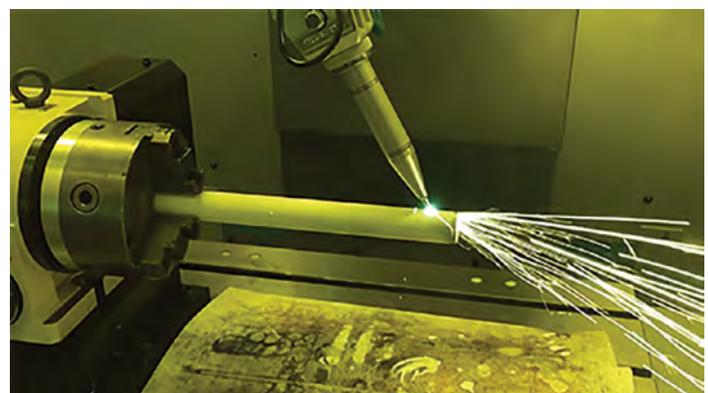
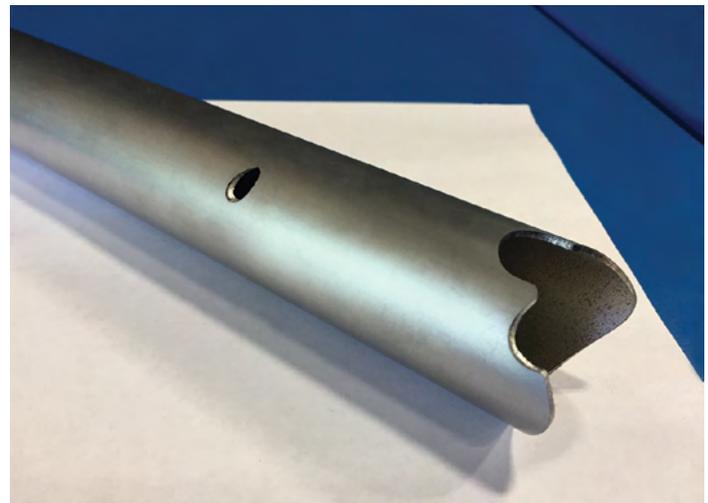
Claimed to be “the best folding bike on the planet,” the Helix bike side-by-side folding design puts the wheels beside the frame and between the cranks. The bike’s “go-anywhere compactness” with great performance and mobility, does it without sacrificing durability.

Beyond creating a novel bicycle, Helix made the bold move to automate its manufacturing facilities to meet the demands for cost, quality, and consistency. A LASERDYNE 430 BeamDirector® fiber laser machining system was a key part of the new process in order to precisely bevel cut titanium tubing that is used throughout the bicycle.

Working closely with Prima Power Laserdyne applications engineers, Helix has created a robust, consistently high quality bevel cutting capability based on the 430BDY system. For Helix, the steeply beveled edges of the titanium tubing requires precise and clean cuts to accomplish perfect fit-up of the tubing for accurate robotic welding. Additionally, the 430BDY fiber cutting system produces holes and slots in the tubular parts.

The key is the steep angle bevel cutting of the titanium tubes. This unique 430BDY capability allowed Helix engineers the flexibility to design the bike assembly for maximum rigidity and strength with the least weight where other tube cutting systems had limited or no titanium angle cutting capabilities.

“The 6-axis LASERDYNE 430 BeamDirector® is fast, flexible and provides the high quality processing that we needed to produce an industry-leading bicycle for our customers.”



"To meet these challenging and different beveled angles, there are unique capabilities within the LASERDYNE 430BDY system," explains Corey Hansen, regional sales manager for Prima Power Laserdyne who helped develop the process.

"A key system feature utilizes a horizontally mounted rotary table with a through-bore chuck to accurately locate and hold the titanium tubes for cutting to shape. Titanium is the ideal material for the Helix Bike design because of its high strength, lightweight, remarkable corrosion resistance and unparalleled durability," says Hansen. "But it can be challenging to process. The 430BDY produces the beveled cuts up to 45° from the surface without dross or spatter residue so tubes are mated perfectly ready for the automated welding operations. No secondary deburring or tube cleanup was needed prior to welding."



Helix bike components are bevel-cut at many different steep angles on the LASERDYNE 430 BeamDirector® fiber laser system. All tubular components are made of high strength, light weight titanium. The bevel-cut process provides an edge finish that allows the parts pictured to mate perfectly without deburring prior to automated welding.

Another helpful 430BDY feature is the system's integrated control of 6-axis laser motion allowing LASERDYNE application engineers the capability to develop the robust and repeatable process for angle-cutting the titanium tubular components. The 430 BeamDirector® system incorporates LASERDYNE'S third Generation BeamDirector®. This gives users like Helix a unique capability for not only bevel cutting but also drilling cylindrical and shaped holes and welding a wide range of materials in addition to titanium, all with the same system. With up to six axes of motion, the system provides the greatest flexibility of any system in its class.

According to Helix CEO Peter Boutakis, "The 6-axis LASERDYNE 430 BeamDirector® is fast, flexible and provides the high quality processing that we needed to produce an industry-leading bicycle for our customers. The addition of the 430BDY was a critical aspect of our manufacturing and the LASERDYNE team showed a strong willingness to partner towards the goal of producing a high-quality laser cut. This helped make possible our drive towards a smaller, lighter, safer, and easier-to-use foldable bike."

"The addition of the 430BDY was a critical aspect of our manufacturing and the LASERDYNE team showed a strong willingness to partner towards the goal of producing a high-quality laser cut."

There is a lot of excitement in the bicycle market about the Helix design," concludes Boutakis. "We have a backlog of over 1700 Helix bike orders at present".



Prima Power “Step Into the Digital Reality” at EuroBLECH

By Ivana Montelli

EuroBLECH provided the opportunity to showcase Prima Power’s success in software development application. Detailed presentations and live demos were offered each day of the trade show.

Detailed presentations featured:

- Remote Care (Fleet Management)
- NEW Tulus Analytics
- NEW Tulus Cloud Manufacturing
- Basic presentations from Power Processing
- DogHouse ordering
- NEW Tulus Line App
- Tulus Power Processing
- How to program Bending Line
- NCEXpress & Masterbend Parametric
- Online training from customer



Live Demos included:

- Remote Care (Fleet management) of all machines connected to show machine data, all machines were connected to provide machine data (alarms, triggers, timeline, root causes)
- NEW Hologram Glasses, Augmented Reality application, the demo was very impressive and caught the attention and curiosity of many people



It was possible to show the potential of new Tulus Cloud Manufacturing, a simple web application from where it was possible to order the DogHouse, the demo part produced by PSBB line during the exhibition, in reality this means to apply very strong concepts like: ErpConnection, Automatic Programming and Production Control. The process was also joined by new Tulus Line App, application to show: line status monitoring, parts flow, and order completion status.

Deep SW products demos were also provided at two reserved rooms featuring NCEXpress (full options), Master BendCam, Tulus Office and Tulus Power Processing.

Additional information on Prima Power software solutions to maximize throughput can be obtained at www.primapower.com



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