POWER Line

CUSTOMER PROFILES • NEW TECHNOLOGY • PRODUCTIVITY • FLEXIBILITY

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The POWER LINE is a Prima Power Publication

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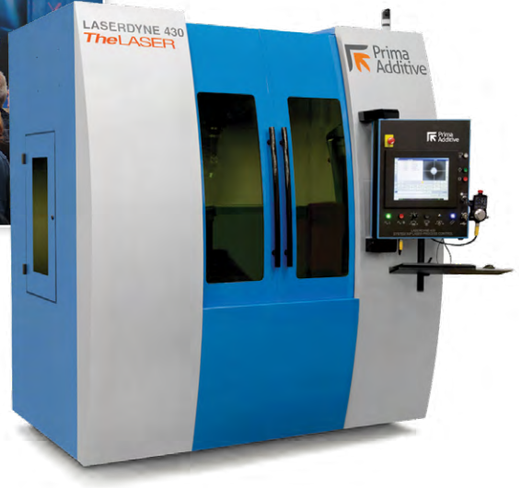

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Prima Power

MANAGEMENT CORNER

15,523 Innovation Days

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

Last October, the second edition of Innovation Days took place, the event dedicated to the presentation of the latest technological advances of our Group, mainly in the laser field. This event, which was particularly successful and appreciated by visitors, led me to reflect on what innovation means for us and how changes and new ideas arise in our Group.

Constant, **open**, **sustainable**, and **smart**: this is how we intend innovation.

Our commitment and our investments in innovation are **constant**. Important resources are devoted to R&D (5% of sales on average) and to technology centers and innovation labs such as the recently opened Advanced Laser Center in Collegno (TO) for research and innovation on the laser systems of the future. The listing to the Milan Stock Exchange, of which we recently celebrated the 20th anniversary, also supported our continuous growth and relentless impulse to technological evolution.

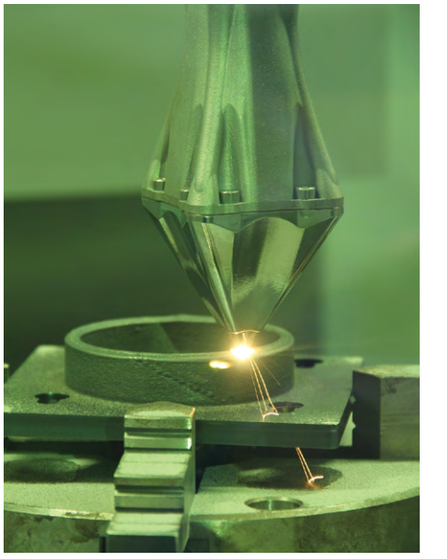
Our model of innovation is **open**: technological advances are not only the result of ingenious ideas and strong technical competences, which for sure are not missing in Prima, but arise most of all from the interaction of several actors, both internal and external to the company. All our employees, particularly those who are in contact with the customers, and the customers themselves, along with universities and research centers, suppliers, and partners all take part in the innovation process. At the center of this process there is always a customer need we are committed to satisfy in the best possible way.

Innovation and **sustainability** are closely intertwined for us. We've always paid a particular attention to reducing the environmental impact of what we do. High-efficient products reduce power consumption and waste, while cutting production costs.

Last, but not least, innovation for us is **smart**. Our software and manufacturing solutions make possible the digital transformation of the production for our customers, and grant a significant increase to their productivity, efficiency, and competitiveness.

In conclusion, we can say that for us every day is an Innovation Day. On balance from the foundation of our company, we have so far spent 15,523 proudly innovative days, creating values together with our customers and stakeholders, our partners in innovation.

Let's continue innovating and growing...together.



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Prima Power

CUSTOMER PROFILE

Laser Next Enhances Diversity at Diversified Tooling Group

With its four affiliated companies, Diversified Tooling Group (DTG), Madison Heights, MI, delivers single-source solutions to the automotive, heavy truck, defense, industrial equipment, power generation, rail, and foundry industries. As its name implies, its *diversified* capabilities enable the company to be a full-service manufacturer of prototype and production stamping dies, low-volume stamped parts and assemblies, as well as fabrication, machining, and assembly of highly-engineered components.

Diversified Tooling Group is a privately-held company with third-generation management. "In 1973, my father started this business in a small 5,000-square-foot alley shop with three employees making tooling aids for copy mills and stamping dies," explains John J. Basso, owner and president. "I came on board in 1975. Fast forward to today and my son John Michael Basso is also an owner and vice president in the company, and we have grown to four companies with a total of 775,000 square feet of engineering and manufacturing floor space with 425 highly-skilled employees."

Diversified Tooling Group's four affiliated companies include:
Superior Cam, Madison Heights, MI
A technical leader in the prototype sheet metal industry, Superior Cam specializes in low-volume production parts and assemblies.
Midland Design, Madison Heights, MI
Midland Design has 50 years of experience designing all types of vehicle stamping dies.
Bespro Pattern, Inc., Midland Heights, MI
Bespro Pattern is a respected leader in the CNC machining of poly patterns, wood patterns, and urethane patterns of solid CAD die design.
American Tooling Center, Inc., Grass Lake, MI
American Tooling Center, Inc. has three locations in Grass Lake, Jackson, and Lansing, MI with six facilities totaling 540,000 square feet. The company supplies hot stamping dies to automotive OEMs and suppliers.

"With the integration of these four companies, DTG can provide complete tool & die service to our customers," explains Mike Austin, director, manufacturing engineering. "Prototypes are made at Superior Cam, the production die designs are made at Midland Design, the patterns are made at Bespro Pattern, and the production stamping dies are made by American Tooling Center. And those dies are sold to North America's major automotive OEMs. We are a Tier 1 tooling supplier. Most of the parts that we make today with our tools are the large Class A parts that are the visible parts of an automobile or a heavy truck. There is a requirement for high surface quality. The other part of our business is in the defense sector. We became involved in the defense business 20 years ago to round out our business and make use of excess capacity that naturally occurs in the tool & die business. We started making the parts that would be installed on ground defense vehicles. We began by making armor plate and heavy sheet metal. And this was one of the first applications for us in laser cutting with Prima Power. Because we were supplying thinner gauge steel plate that would be used in various defense vehicles, we needed to have 2D laser cutting. And we also needed a laser for 3D laser cutting for trimming and piercing holes."

After evaluating many different machines 5-axis machines, American Tooling Center purchased the Prima Power Laser Next 1530 in 2014.

The Laser Next 1530 is primarily used for the hot stamping part of the company's business including R&D work, prototype work, production tool tryout, and process development including laser cutting development, and low-volume production.

Prima Power Lasers
Through the years, the companies of DTG have become very familiar with Prima Power lasers, including an early model of the LASERDYNE, two Platino 2D lasers, four Rapido 3D lasers, and, most recently, two Laser Next 5-axis lasers.

"By 2014, we needed a very large and very fast 5-axis laser to support our hot

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CUSTOMER PROFILE

Laser Next Enhances Diversity at Diversified Tooling Group

Continued from page 3

stamping press," explains Basso. "When we evaluated the machines, we compared the Prima Power Laser Nest to the competing 5-axis machines and robotic laser cutting. We tested each of these machines for ease of setup, ease of programming, the accuracy of the cutting, how fast we could do the trim lines, the ease of maintenance, support from the manufacturers, the technical level of the machine, and the overall cycle time of the machine. The Laser Next was selected because it clearly beat the competition in almost every category. We went to the 2014 FABTECH show and purchased the first Laser Next that was sold in North America and installed it at American Tool Center."

In 2016 Superior Cam was in need of a very large 5-axis laser to prototype body sides. The company purchased a larger envelope Laser Next 2130 to fit the job requirement.

Laser Next

"Once we installed the Laser Next 1530 and started using it for tryout and development of the process, we were amazed at how fast the machine was," adds Austin. "It was light years beyond anything we had dreamed of. In terms of performance, the robot took over two minutes to cut the part, the competing 5-axis laser took over one minute to cut the part, and the Laser Next cut it in 45 seconds. That difference in performance put the decision over the top...that, and the history we had working with Prima Power for so many years, made it an easy decision."

"Once we installed the Laser Next 1530 and started using it for tryout and development of the process, we were amazed at how fast the machine was. It was light years beyond anything we had dreamed of."

Automotive part manufacturers need highly-specialized products for the cutting of sheet metal parts, capable of answering to all their specific requirements. Thanks to a deep and unique experience of over 35 years in this field and to a continuous dialogue with customers and partners operating in the car industry, Prima Power has designed the new 3D laser machine for automotive production: Laser Next.

The Laser Next's high accuracy, repeatability, and precision have allowed Diversified to replace some dies and pierced dies with laser cutting, making the process more competitive for its customers.

Every detail was studied and developed to maximize machine uptime. Maintenance was also lowered and simplified to reduce non-productive times and the need of specialized resources dedicated to these activities.

Laser Next has a working range of 3,050 x 1,530 x 612 mm and is equipped with 3 kW or 4 kW high brilliance fiber laser. Its compact focusing head, fully sealed for best protection, features direct drive motors, double protection SIPS, fully-metallic sensor, and Focal Position Control.

The high-precision and dynamic turntable with servo motor and absolute encoder is designed to ensure the highest reliability, safety, and ergonomics. With the blocking times, the distance between table and light curtains is very short, allowing faster and more comfortable loading/unloading operations in full safety.
According to Austin, the Laser Next 1530 is primarily used for the hot stamping part of the company's business including

R&D work, prototype work, production tool tryout, and process development including laser cutting development, and low-volume production. "We learned from the Laser Next 1530 that the turntable was a major benefit to minimize the lost time of loading and unloading," says Austin. "The machine is down a minimum of time to load and unload parts. Our cost of laser cutting very much depends upon keeping that beam running. It is very seldom that you will see it running without tooling on both sides of the table so that we minimize that load/unload time."

"At the American Tooling Center, the Laser Next 1530 is cutting some heavy gauge exotic material," says Basso. "Its main focus is on the hot stamping material which is a different grade of steel. That machine has stood up to the speed requirements. All the hot stamping parts by necessity have to be laser trimmed. You cannot use any trim dies. That machine has been holding up great to all the production we have."

From left to right, John J. Basso, owner and president; Mike Austin, director, manufacturing engineering, and Frank Delkov, plant manager of Superior Cam.

"Both of our Laser Next machines have been very durable, very dependable, and the speed and accuracy have been excellent."

In 2016, another DTG company, Superior Cam, was in need of a very large 5-axis laser to prototype body sides. "We purchased a larger envelope Laser Next 2130 to fit the job requirement," explains Basso. "Both of our Laser Next machines have been very durable, very dependable, and the speed and accuracy have been excellent. We have been very happy with both. There has been very little downtime. They have run very true."

"The improvement in productivity has been enormous. The cut quality is excellent....and we are doing that with nothing more than high-pressure shop air."

According to Frank Delkov, plant manager of Superior Cam, prior to the Laser Next 2130, the company had two CO2 lasers running production on door assemblies for a Class A truck. "We had one machine making left hand door outers and another machine making right hand door outers," explains Delkov. "We moved this job to the Laser Next 2130. We now run both the left and right hand door outers in one fixture on the Laser Next. What took us over three minutes per door outer now takes us 30 seconds. The improvement in productivity has been enormous. The cut quality is excellent....and we are doing that with nothing more than high-pressure shop air. There are no specialty gases we are using. That's huge. It's simple, effective, and the quality is excellent. The Laser Next is also a very user-friendly machine. We do all our training internally between our operators. And in a matter of just a few weeks, we can take someone off the floor and have them operational on the Laser Next."

"The Laser Next's high accuracy, repeatability, and precision have allowed us to replace some dies and pierced dies with laser cutting," says Basso. "That makes the process more competitive for our customers. In many cases it allows them to make low-volume parts that they otherwise would not be able to make. It has also allowed us to supply our customers with parts and tooling to make parts that previously they would not be able to produce. Some of those parts are cold stamped parts and others are hot stamped parts, but if we didn't have the laser cutting we would not be able to afford the tooling to make those parts. The lightning-fast fiber laser cutting, combined with the extremely accurate and repeatable Prima Power Laser Next 2130 and 1530, allows us to eliminate the tooling cost for trim and pierce dies for cold stamped parts, significantly reducing investments for low-volume production, with production costs comparable to a *die complete* process."

"And as new processes are introduced, we know that Prima Power will be there to support us."

"This has opened up new lines of business for us in automotive, truck, defense, and specialty areas of our business," concludes Basso. "It is a manufacturing process that we previously only had used for prototypes. We also know that Prima Power is a leader in the development of new processes. And as new processes are introduced, we know that Prima Power will be there to support us."

CUSTOMER PROFILE

Riding the Night Train to Higher Productivity

By Federico Distante

The Minerva Omega Group in Bologna, Italy is a company that truly embodies skills, technology, and entrepreneurial spirit. Clear ideas and determination are the traits that made it possible for Andrea Salati Chiodini, the Group's CIO and technical manager, to focus on process automation in the workshop. This allowed the company to gain an edge over competitors in the highly-regulated world of machines for the food industry. This was achieved by the installation of the fully-automated and integrated Night Train Flexible Manufacturing System (FMS) by Prima Power, capable of producing a semi-finished product that is immediately ready for the next manufacturing steps.

Today, Minerva Omega Group, whose international reputation has been further strengthened with a modern, winning management system, can therefore boast one of the most comprehensive product ranges on the market, and a well-established customer portfolio with a presence in every food sector, in mass retail as well as through dealers in every country in the world. Salati Chiodini, together with his brother and sister, are the family's third generation at the helm of this historic and long-lived industrial company.

Minerva Omega Group s.r.l. is a world leader in the design and production of machinery and systems for processing meat and food in general.

Andrea Salati Chiodini, together with his brother and sister, are the Salati Chiodini family's third generation at the helm of the Minerva Omega Group.

Minerva Omega Group s.r.l. was established in 2012 from the merger of two historic companies, Minerva from Bologna and Omega Ceg from Varese. Both companies have a long history, tradition, and experience. La Minerva, which will celebrate 75 years in business in 2020, was founded in 1945 in Bologna, an area with a strong mechanical and engineering tradition, thanks to the entrepreneurial initiative of Mario Chiodini, the current owners' grandfather. It designs and manufactures machines for meat processing, catering, the food processing industry, packaging centers, and offers a high-quality range of products with an excellent price-quality ratio and service life.

"We are one of the oldest family businesses in Italy," explains Andrea Salati Chiodini. "It is precisely due to this entrepreneurial leadership and a marketing-oriented managerial mindset that we led Minerva to acquire and incorporate some of our competitors: first Bologna-based Artex, then Omega, owner of other historic brands such as Ceg, General Machine, Regina, Suprema and, recently, Aria and Mincer2000, all brands that are well-known by experts in the field worldwide."

All-Italian Excellence
Minerva Omega Group is a well-established all-Italian example of prominence in the industry, with strong investment ability in the design and development of new models, in automated equipment and production lines. "We believe in the quality of work, evidence of a major group commitment carried out by our employees and associates," explains Salati Chiodini. "Despite the great difficulties and the competition from countries in which manufacturing has a far lower cost, we defend and support the Made-in-Italy brand with all our strength, without relocating the production of main components and the assembly of machinery from the Bologna and Varese facilities."

The Prima Power Night Train system installed at the Minerva Omega plant in Bologna.

Commitment is significant... and investments, to keep us technologically and qualitatively competitive, are made on a regular basis and involve the entire supply chain. Excellence, competitiveness, and quality are imperative values for us. The company's ongoing growth across all markets is the best reply to the question whether it is still worthwhile investing in Italian manufacturing production today."

A Major Technological Choice
Minerva Omega Group's mission is clear. Some time ago, the company embarked on a path to automating the most cutting-edge manufacturing processes, not only with a view to being competitive, but in keeping with the quality standards required by food machinery regulations in force.

"We introduced the first automatic machines in 1984," says Salati Chiodini. "They were chip removal machine tools as our product previously resulted from the processing of cast bodies. Very little sheet metal was actually used, and its processing was outsourced. Around 1994/95, however, we began to perceive a change in the market. In addition to functionality, a certain aesthetic value was starting to be required for machinery. We therefore introduced stainless steel and started manufacturing some machines with this material, while continuing to rely on subcontractors."

A Prima Power Combi Genius 1530 punching/laser cutting machine with a 4 kW fiber laser and an LSR6 loading/unloading and stacking robot is connected to the Night Train.

"We decided to combine the machine with a Night Train FMS storage unit featuring 10 towers with 12 drawers. This was an innovative and efficient production organization that made it possible for us to give a strong boost to business."

"By 1998, we decided to purchase our first laser cutting system – a Prima Industrie Platino system, with a typical 1,500 x 3,000 mm work area and an automatic pallet changer, thus giving a strong boost to the business. In 2002, we started building these new headquarters where we also installed a Finn Power laser/punch combination solution with a 2.5 kW CO2 source, that we used until last year. It was a choice stemming from a desire to automate the processing cycle as much as possible, which is why we decided to combine the machine with a Night Train FMS storage unit featuring 10 towers with 12 drawers. This was an innovative and efficient production organization that made it possible for us to give a strong boost to business without a hitch until January 18, 2018, when a fire ravaged our sheet metal department, forcing us to outsource steel processing for a few months. We also started replacing what had been destroyed, putting all the major players in the market back on the table even if, in the end, we preferred to continue along the technological path we had embarked on several years

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CUSTOMER PROFILE

Riding the Night Train to Higher Productivity

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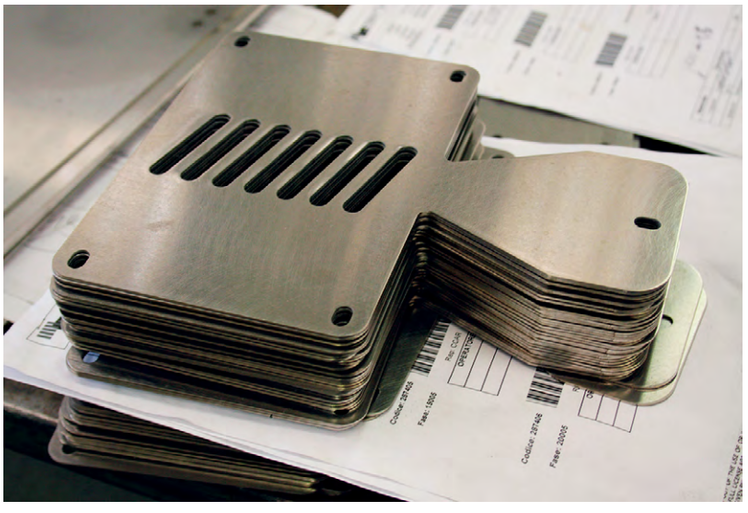
before, and opted for Prima Power, the only system to ensure us continuity after taking over Finn Power. It might seem it was a choice based on likability, but I assure you we really put everyone back into play by analyzing the strengths and weaknesses of each one's solution. Eventually, being precisely aware of what we needed, Prima Power turned out to be the system that was most in line with our production expectations and our needs also in terms of plant layout."

"Prima Power turned out to be the system that was most in line with our production expectations and our needs also in terms of plant layout."



Prima Power's system is fully automated and capable of turning out a semi-finished product that is immediately ready for the next steps.

"We made a decision under the sign of continuity," adds Andrea Salati Chiodini. "Also in terms of timing as being able to use the same storage unit allowed us to cut installation times by months. It was a wise choice, consistent with our desire to reduce downtime to as little as possible also because, by resorting to external partners for sheet metal working, one can never really master the situation, in terms of both timing and the quality level our customers were accustomed to."

A Truly Tailor-Made System

Today, it goes without saying that the new beating heart of Minerva Omega's production is still the Night Train, consisting of 14 blocks and 200 drawers, which stands out as state-of-the-art in the field of automated storage units. It is connected to the punching/laser cutting machine Prima Power Combi Genius 1530 with 4 kW fiber laser and LSR6 loading/unloading and stacking robot, as well as a two-dimensional fiber laser cutting system Prima Power Laser Genius 1530 with linear motors,

Minerva Omega Group's CIO and Chief Technology Officer Andrea Salati Chiodini, together with Cesare Brunelli, Prima Power's area sales manager for Emilia Romagna.

equipped with a 6 kW fiber source, LU sheet metal loading and unloading robot and LST automatic sorting and stacking robot.

"We speculated on four layouts, as we tried to optimize the system according to the available space by recovering, where it was possible, even just 15/20 cm to improve every little detail, such as forklift passage or swarf unloading flows, or operator access doors," continues Salati Chiodini. "In this regard, I would like to underline Prima Power's great willingness and tailoring ability in managing to create a truly tailor-made product, since they did step into our shoes to better understand our issues, and never suggested shortcuts in terms of standard solutions. They immediately understood the importance of offering a totally automated production system, capable of turning out a semi-finished product that is immediately ready for the next steps. Sheet metal is fed in, and the finished product having the level of finish we require is fed out. To us, this has always been a winning aspect and the result of being used to working 24/7. Technology has reached such a high level of reliability that we can launch a nesting on a Friday afternoon, and on Monday morning get all parts ready to be sorted out in the bending area – where a Prima Power eP-0520 servo-electric press brake machine was also installed – and in the assembly area; this is an essential aspect for us to be able to plan our work, reduce downtime, and minimize rejects."

"We try to gather as many pieces as possible into the nesting so as to get to an 85% sheet filling percentage."

Combination Machine or Laser Cut?
Today, the installation layout of Prima Power Night Train makes it possible for Minerva Omega to operate both make-to-order and based on work-in-process inventory with the storage unit, that is also used to store semi-finished parts. Make-to-order processing includes foreign orders characterized by large quantities. An order is entered into the company management system, an estimated delivery date (in line with customer expectations) is generated, and production is launched. MRP handles everything, from orders to trade components suppliers as well as, internally, chip removal and sheet metal cutting operations. Each phase of the cycle is scheduled by means of a planning tool that logically and efficiently manages the work flow on the various machines in the shop, as well as in the various progress steps, up to product assembly and delivery.

As for production launches related to the Prima Power Night Train system's performance, at Minerva they try to exploit machining nesting processes so as to get the least possible scrap, while optimizing processing as much as possible. "Having parts that are 90% made of stainless steel sheet, we always manage to create excellent nesting processes that combine the best mix of parts, even consumables, according to the job orders to be processed. We try to gather as many pieces as possible into the nesting so as to get to an 85% sheet filling percentage," explains Salati Chiodini.

"Moreover, having a best finished cut with no burrs means for us to avoid reworking pieces again to sand or grind them. All this involves a reduction in time and considerable economic advantages with a favorable impact on the end-user customer."

The Night Train also integrates Prima Power Laser Genius 1530, a 2D fiber laser cutting system equipped with a 6kW fiber source and an automatic stacking robot for LST laser machines.

Minerva Omega Group boasts one of the most comprehensive product ranges on the market.

It was also interesting to understand what aspects are considered when deciding whether a workpiece type is to be processed on a Combi Genius or on a Laser Genius cutting system. In this case, Salati Chiodini's answer was clear and unambiguous: "We only make parts to be cut or thick parts on the laser system, while we use the combination unit to make all those parts that need other work processes such as deformations, threaded holes, embossing, notches and slots. If, however, I had to draw a comparison with the past, when we had CO2 lasers instead of fiber sources, I would say that the most obvious aspect is perhaps the one related to energy consumption, as we are having quite significant savings if you consider that the combination machine alone consumed about 80kW, while today, with both machines, we do not reach this figure. Fiber laser requires very low maintenance and guarantees a better and finer cut in most cases, and this applies to both the 4kW Combi machine and 6kW Laser Genius, which ensure comparable cutting performance. The Laser Genius, having higher power, with thickness being equal, manages to get slightly better quality and shorter timing. However, I would say that in both cases, for up to 15 mm thickness, we can get practically perfect cut quality, in line with the provisions of the certifications to which we are subjected. Moreover, having a best finished cut with no burrs means for us to avoid reworking pieces again to sand or grind them. All this involves a reduction in time and considerable economic advantages with a favorable impact on the end-user customer."

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INNOVATION DAYS

Prima Industrie Presents New Generation of Systems for Additive Manufacturing

The second edition of the Innovation Days, the international event dedicated to innovative technologies for Additive Manufacturing and sheet metal processing, was held in the new Advanced Laser Center of Prima Industrie. Over 300 guests, including customers, universities, and research centers, were welcomed to the event.

Gianfranco Carbonato, Prima Industrie Executive Chairman, during his introductory speech at the Innovations Days.

The 4000 m2 of the Advanced Laser Center are dedicated to the new research and innovation laboratory for advanced laser production systems. The Advanced Laser Center, built with the latest sustainable building practices, uses geothermal systems and solar panels to minimize the environmental impact.

The newly opened Prima Industrie Advanced Laser Center dedicated to research and innovation on advanced laser production systems.

The new facility is part of a wider program for the renewal of the Group's sites in the Torino area, which began in 2016 with the construction of the new Collegno Headquarters and Technology Center and will be completed within the next year with the construction of the new production plant for laser machines, currently located in another area of the city. The total investment is around 25 million euros.

During the Innovation Days 2019, the new generation of systems for additive manufacturing was demonstrated by Prima Additive. Prima Additive is a division of the Prima Industrie Group and specializes in delivering turnkey solutions for additive manufacturing. The innovations shown during the event covered both Powder Bed Fusion (PBF) and Direct Energy Deposition (DED) technologies.

At Innovation Days, Prima Industrie presented the Print Genius 250, the new PBF machine with a construction volume of 262 x 262 x 350 mm, suitable for the production of medium-sized components. The Print Genius 250 is the ideal solution for high productivity with metal printing applications due to its dual 500 W single-mode laser, which reduces production time, combined with intelligent software for fast part orientation and definition of the machine parameters.

During Innovation Days, the new systems for additive manufacturing were presented and demonstrated.

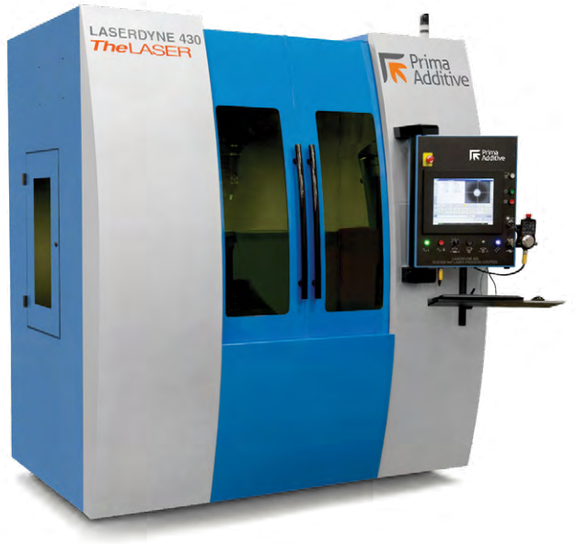
Print Genius 250 is suitable for processing of a wide range of materials including: high strength steel, stainless steel, maraging steel, high-temperature nickel-base alloys (e.g. Inconel), aluminium and copper alloys, cobalt-chromium, and titanium.

The guests saw a live demonstration of the Print Sharp 250 PBF machine at work, with a construction volume of 250 x 250 x 300 mm. The system is equipped with the Convergent CS450 proprietary laser, and combines high quality component production with excellent surface finishes and mechanical characteristics at an excellent quality-price ratio.

Scan to view Innovation Days.

Over 300 guests attended the Prima Industrie Innovation Days event held last October in Collegno (TO), Italy.

As part of the Direct Energy Deposition technology at Innovation Days, Prima Additive presented the LASERDYNE® 430 DED, the compact and accurate laser metal deposition platform with a working volume of 585 x 400 x 500 mm. The LASERDYNE 430 features a high build rate (max 40-50 cm3/h – typical 20 cm3/h), and excellent end-part properties, suitable for 3D part fabrication, reworking, and repairing.



The new Laserdyne 430 DED system is suitable for 3D part fabrication, reworking, and repairing.

The LASERDYNE 430 DED is equipped with the Advanced Head, the innovative multi-purpose DED laser head with a modular design that can be mounted in different configurations to easily adapt to multiple laser processes. The additive nozzle itself is manufactured using additive manufacturing processes.

The flexibility of the Laserdyne 430 DED can be further increased with the addition of an optional roto-tilting table, which adds two more axes for more complex applications.

For PBF technology, Prima Industrie presented the Print Sharp 250 and the new Print Genius 250.

Prima Additive also provided some information on the next generation of additive manufacturing machines, which will be launched by the Group over the next year and will enable Prima Additive to expand the application of this technology by increasing the production areas, the productivity and the efficiency of the systems, and extending their application range.

Prima Additive engineers gave live presentations and demonstrations of Additive Manufacturing technologies.

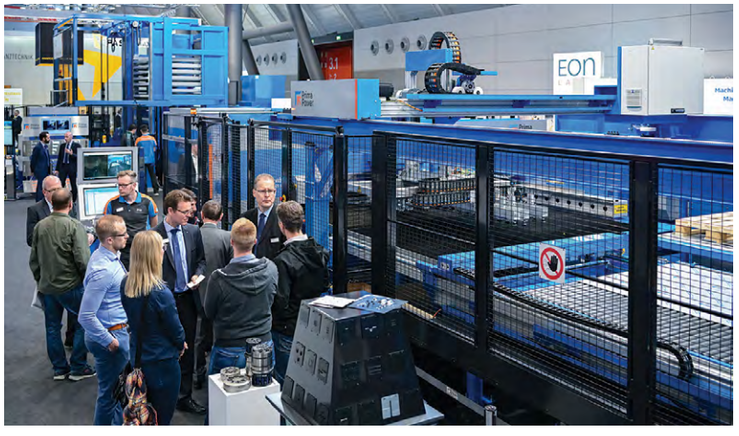
The Innovation Days visitors were also shown the latest news on the entire range of sheet metal processing products, presented in the adjacent Headquarters & Technology Center.

TRADE SHOW

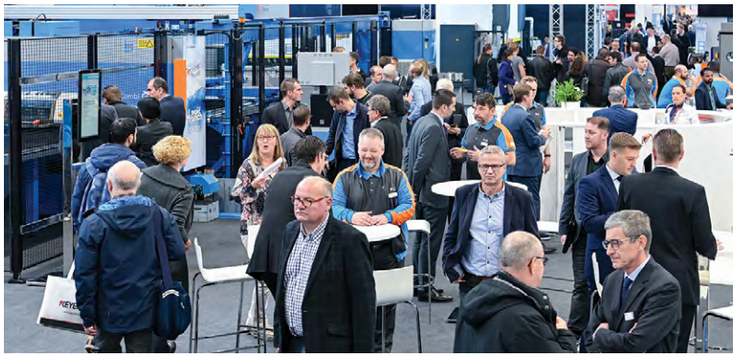
Blechexpo: *Prima is Here* Advanced Technologies Combined with Excellent Customer Service

The 14th Blechexpo, the international trade fair for sheet metal working, was held in Stuttgart Germany, from November 5-8. A total of 41,152 visitors from 113 countries attended the event. The exhibition was also very successful for Prima Power. There was great interest in the company's technological advances and introductions of machines, systems, and software.

Making its world premiere at Blechexpo was Prima Power's new bending solution, the eP Genius 1030, consisting of the integration of a servo-electric press brake eP-1030 with an automatic tool change storage. The result is a faster and more versatile and reliable bending system, especially designed for minimum batches. This makes it possible to reliably estimate the machine set-up and short cycle times which are imperative to gain a higher market competitiveness.

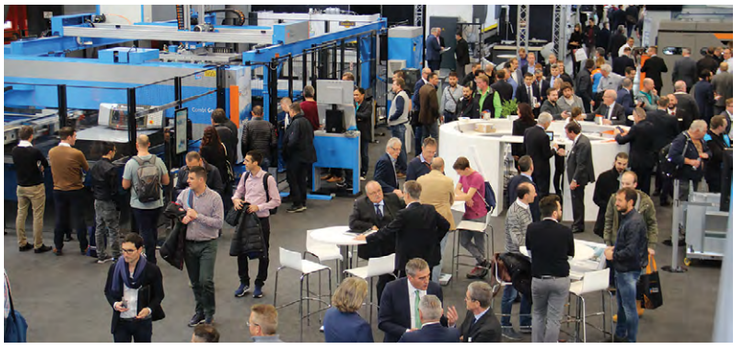


In Stuttgart, Prima Power also displayed the high-performance **Laser Genius 1530** fiber laser machine with 10kW laser, featuring new cutting strategies allowing top performance of cutting speed, piercing time, and reduction of gas consumption. The machine was showcased with the Combo Tower Laser, a flexible storage system integrating loading and unloading for the optimal solution in lights-out production.



Celebrating 30 years of integrated laser-punch technology, Prima Power showcased the **Combi Genius 1530** with the new eye-safety protection mounted around the cutting head, which avoids the use of protective walls around the machine, resulting in greater accessibility and visibility of the system and simplified installation.

In the context of panel bending technology, the **BCe Smart** was also featured. This servo-electric, semi-automatic machine is ideal for single-piece production, kit of components, perforated material, sheets with big holes, and embosses. Its compact layout and combined loading and unloading sequence guarantee high productivity.



Innovations were also presented in the Prima Power software family. In particular, **Press Cam** is the new programming software for the Prima Power press brakes featuring the integration with our **2D CAM NC Express**, for an optimized management of the 3D drawings with information transfer on bending lines and relative tools. Prima Power's **Industry 4.0** products for data monitoring and advanced diagnostics through IoT application were also showcased.

"Prima is here", the slogan we chose for this trade show, epitomizes our approach to customers, not only during the exhibition, but in every moment of contact with them. Prima Power is always at the customer's side to offer support and expertise with cutting-edge technologies, truly listening to their needs and giving innovative and human-friendly solutions to meet their requirements.

TRADE SHOW

FABTECH 2019 & Open House

FABTECH 2019, North America's largest metal forming, fabricating, welding and finishing event, hosted the metal manufacturing industry at Chicago's McCormick Place November 11-14. Despite the unexpected winter weather, the 2019 event closed with record attendance, marking a 7% increase over the previous FABTECH Chicago. A total of 48,278 attendees from 95 countries participated in four full days of product discovery, education and collaborative discussions on key industry issues.

Record crowds filled the Prima Power booth each day of the show. Visitors were able to see the Laser Genius, the Combi Genius, and the eP Series servo-electric press brake in action.

Open House

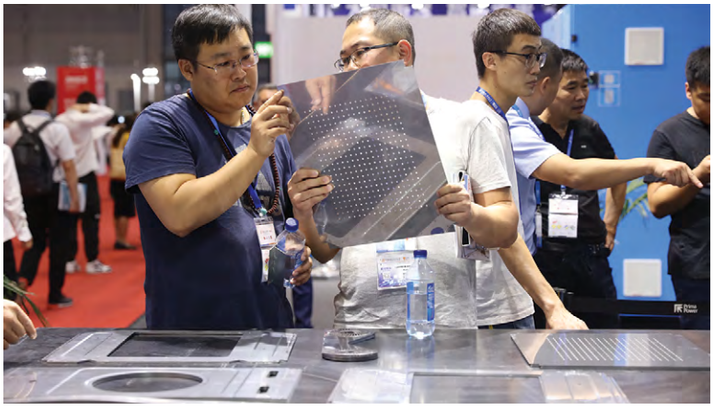
For two nights during FABTECH, Prima Power hosted an Open House after show hours at its showroom in Arlington Heights, IL. Visitors were able to get a close-up view of even more of Prima Power's innovative sheet metal machinery.

Prima Power's comprehensive product range of sheet metal fabrication machines and systems cover all steps of sheet metal working, laser cutting, welding & drilling, punching, combined punch/shear and punch/laser, bending automation, and software.

TRADE SHOW

MWCS 2019
Shanghai, September 17-21

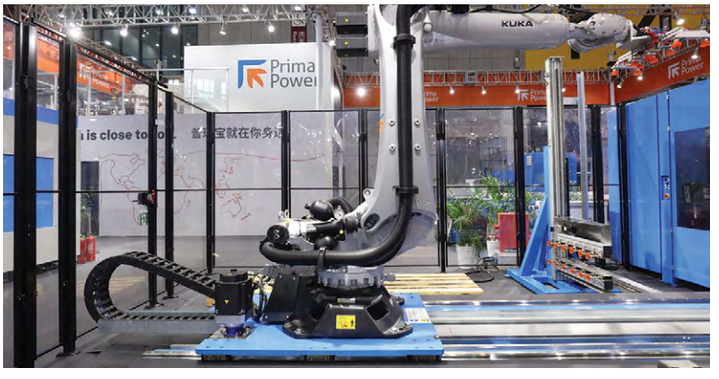
From September 17-21, the Metalworking and CNC Machine Tool Show (MWCS) was held in the Shanghai Hongqiao National Convention and Exhibition Center. MWCS is the most important trade show for European machine builders in the growing Chinese market. This year, Prima Power showcased three updated products during the show.



The first produce was the Laser Sharp 2040, a 6kW fiber laser able to cut thick and thin sheets of medium-large format.

The second product was the Combi Sharp, a combination laser/punch machine with high energy efficiency, low maintenance requirements, and fast operation speed. The Combi Sharp combines superior laser cutting with the ability to do forming, tapping, and marking.

The third product was a fully-automatic, servo-bending center equipped with a robot, which can automatically load and unload materials, ensure bending quality, and reduce production cost. It is suitable for medium- and long-term non-stop production. In recent years, due to the improvement of environmental protection requirements, the rapid rise of personnel wages and ground rental, and the pressure for recruiting skilled workers, sheet metal processing enterprises are gradually transforming. The dependence on personnel is decreasing, and the dependence on equipment is increasing. The demand for energy saving and efficient automatic bending centers will be the common trend.



As a result, Prima Power will focus on promoting our high-end production line focusing on the Industry 4.0 concept. According to Pei Jin, regional manager of Prima Power China, "Prima Power can provide customers with flexible and fully-automatic solutions to help them truly realize an unmanned manufacturing plant. At present, this fully-automatic production line is largely used in such industries as electrical switch, kitchenware, door & window manufacturing, and elevators & escalators, etc. This production line is suitable for versatile production and small-batch production. It can be changed quickly between different products. It has high production efficiency and multiple equipment connection options. It can realize seamless connection from warehouse materials to ready products without any human intervention."

With the incentive of policies such as "made in China 2025" and "Industry 4.0", Prima Power also follows the development trend of digital technology, focusing on the connection and interaction between machines, people, and processes.

SOFTWARE

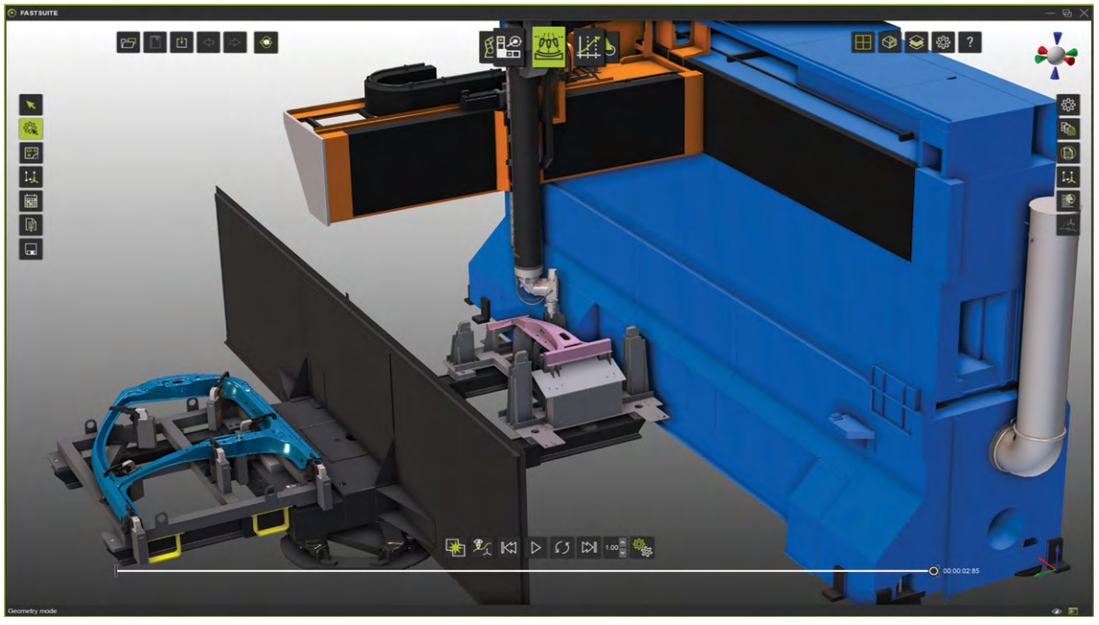
FASTSUITE for PRIMA POWER –3D Laser CAM: Sharp and Genius Editions

The Perfect Software for 3D Laser Cutting Systems

By Ivana Montelli, SW Product Manager, Prima Power

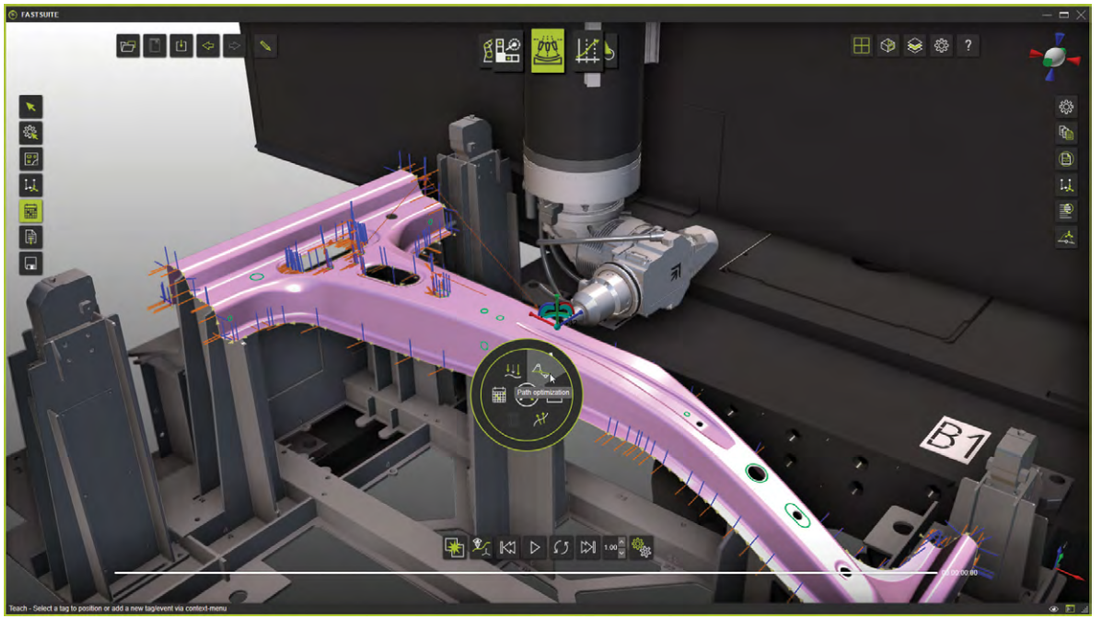
According to the CENIT AG company, "FASTSUITE – Prima Power edition" is the perfect fit for Prima Power 3D laser cutting systems: it supports the entire process from CAD data import to NC program optimization.

CAD Interfaces to Import Part and Fixture Designs
Standard interfaces are included in the base product, such as IGES, STEP and JT. Specific CAD interfaces are available as options to directly load CAD files from CATIA, NX, SolidWorks, Autodesk Inventor, Pro/Engineer, and many more.



Quick Build-up for Prototype Fixtures
The software offers a sketch-based, template-driven fixture definition with multiple parameters to control plate build-up. The software automatically creates reliefs for cutting contours and weight reductions. An automatic nesting to cut plates on a 2D machine or a DXF output of nested fixture is also available.

Toolpath Generation and Optimization
Powerful and proven CAD-to-path algorithms enable a quick contour programming and provide full support of macro geometries, such as circles or slots. Manual teach-in functions (e.g. for pre-positioning and linking motions) are also included. Partial or full simulation of single geometries, geometry groups, and complete programs, along with high performance collision control and issue monitoring, ensure error-free programs.



Machine Library, Postprocessors, and Prima Power NC Simulation
Pre-configured postprocessors are available for all 3D machines from PrimaPower: The LaserNext family, Rapido, Rapido Evo, Optimo, Domino, and Laserdyne family. A Prima Power NC simulation is integrated into FastSuite to provide exact cycle time.

CUSTOMER PROFILE

BCe Smart Meets the Challenge in BC

Ever since Paramount Components opened in 1988 as a sheet metal fabrication job shop in British Columbia, the company has never shied away from a challenge. In fact, challenging jobs have become Paramount's niche in the market. "We typically take on the more difficult work," explains Jamie Palliardi, owner. "We tend to stay away from the simple longer-run jobs, such as 10,000 brackets with one 90-degree bend. Our niche is doing the more difficult jobs...the jobs that the competitors will shy away from because of multiple complex bends that all have to fit together or multiple part assemblies that all have to come together and work within very tight tolerances. My dad Mark founded the company and always thought that we would have a much stronger work force if we gave them a challenge. So we always go after the more difficult work."

According to Jamie Palliardi, owner, Paramount Components typically takes on the more difficult work. The company purchased the Prima Power BCe Smart to meet this challenge.

International Presence

Today the company ships prototypes and custom sheet metal parts and assemblies across North and South America, Asia, and Europe from its plant in Abbotsford, BC, Canada. Paramount services such diverse industries as telecommunications, electronics, medical, dental, printing, military, architectural, automotive, and others.

In order to ensure consistent high quality and on-time delivery, Paramount has always put a premium on innovation and state-of-the art fabricating equipment. And most recently, the search for more efficient bending was a key consideration.

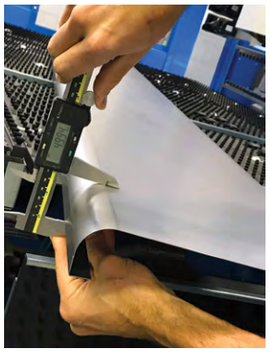
Bending Bottlenecks

"Bending is one of the hardest departments for us to staff," continues Palliardi. "It takes a great amount of time to learn how to do forming on a press brake properly. It can take years to properly train a good press brake operator to have the knowledge to form all the different types of parts we process and be proficient at their job. So it was often the first area of our facility for bottlenecks in production to occur. This was especially true when bending large parts, such as cabinet doors, that need two press brake operators to handle. We were doing long runs at the time and were worried about our employees' fatigue from having to lift these heavy parts all day. That was one of the main reasons we started to look for alternatives to press brakes. We first looked at robots. After researching the robot, we discovered they were still a bit finicky. They needed a great deal of set up time. There are literally thousands of parts that we form, and most of them are smaller-run sizes. We would have spent more time setting it up – finding specialized jigs or how to grip the part. The robot did not provide the versatility we needed."

"When we put our feelers out in the market, and talked to other people in the sheet metal world, the feedback was that Prima Power would be better able to service us in BC than their competitor."

Panel Benders

"Our production manager suggested we take a look at panel benders. We began doing the research online. We wanted to go with a company that had an established panel bender and knew the technology well. We looked at Prima Power and a competitor...and we chose the Prima Power BCe Smart. One of the deciding factors was serviceability. When we put our feelers out in the market, and talked to other people in the sheet metal world, the feedback was that Prima Power would be better able to service us in BC than their competitor. The BCe Smart was installed in August 2018."



The BCe Smart with its innovative servo-electric bending technology is the optimal solution for medium production volumes as well as for low volume or lean production. It guarantees precision and repeatability with a considerable reduction of maintenance costs.

BCe Smart

Prima Power BCe Smart introduces new principles for modern semi-automatic machines by innovating new technologies and by enhancing intelligence, that combined with operator ability, makes this machine easy to use and eliminates the

margin of error. The Prima Power BCe Smart with its innovative servo-electric bending technology is the optimal solution for medium production volumes as well as for low volume or lean production. It guarantees precision and repeatability with a considerable reduction of maintenance costs.

BCe Smart's compact layout and unique loading/ unloading sequence guarantee high productivity and offer a very attractive investment.The large working table that allows loading and unloading in a single sequence increases productivity.

The BCe Smart's compact layout and unique loading / unloading sequence guarantee high productivity and offer a very attractive investment. The large working table that allows loading and unloading in a single sequence increases productivity. The machine is extremely easy to use and does not require skilled operators. Due to the barcode reader and the ATC system, its setup is automatic. It takes place in masked time and activates dynamic production queues.

The high ergonomics and safety levels are obtained through a series of features such as the absence of physical barriers for manual loading, warning lights and acoustic signals to synchronize the loading and unloading, and the additional interactive display that guides the operator in the working phases to be carried out, for example, the orientation of the pieces, etc.

The machine is extremely easy to use and does not require skilled operators. Due to the barcode reader and the ATC system its setup is automatic. It takes place in masked time and activates dynamic production queues.

With the BCe Smart, managing the entire production process is easy and efficient, with the Open numerical control by Prima Electro, the Tulus operator interface, and the Master Bend Cam programming system. The machine is also prearranged to be integrated with robots for the automatic loading and unloading.

"The BCe Smart can handle whatever size run we need for our customers' demands."

Long Runs & Short Runs

"We originally purchased the BCe for large-sized parts and high volume," says Palliardi. "Today we are using it more for smaller runs. In a day, we put through 10-12 different jobs, opposed to before when one job would take 4 -6 hours. Today, we run a lot more parts, but smaller runs. Being a job shop, this can change over time and the BCe Smart can handle whatever size run we need for our customers' demands."

Benefits of the BCe Smart

"Today, we keep all our highly-skilled forming team on the press brakes," explains Palliardi. "We have hired new employees that don't require as much training to run the BCe Smart. I can also run the bender through our three shifts. I can have a guy that started last week, and show him how to load and unload it, and that person can keep the machine running. We are trying to put everything on the BCe that will fit because it will be processed faster than on the press brake. Because we have all the tooling in the machine, I would be surprised if our longest set up would take as long as five minutes. We can quickly move from one part to the next — the press brakes don't even have a chance to compete. Another big selling point for us was that with the panel bender you don't have to remove any tools. We buy a press brake and then we have to spend a lot of money on tooling. As of today, we run around 20% of all our parts on the BCe. Our goal is to raise that up closer to 40% in the near future. To date, we've never had a backlog at the machine because it is so quick. On a Monday, it may look that we have quite a bit of panel bending to do. Then I will recheck things on Wednesday and it's all done and moved through the shop, and there is no queue by the BCe Smart."

"Anything that we put through the BCe bender goes through smoothly. We can clear things through production much quicker."

Leading Edge Technology

"We were the first company in BC to purchase the BCe," concludes Palliardi. "Paramount has always prided itself as a company that was on the leading edge of technology. We pride ourselves on quality work...and to do a quality job, we need to have the very best equipment.The BCe has also helped us in quoting jobs. We can quote the exact times things are going to take...and we can fine tune what the pricing is going to be as well. And as a job shop, we face constant pressure from our customers to decrease our lead times. Anything that we put through the BCe bender goes through smoothly. We can clear things through production much quicker."

PRODUCT REVIEW

Prima Power Combi Lasers: 30+ Years of Expertise

By Marko Piirto, Product Manager

Combination machines were developed when the productivity of manufacturing was approached in a totally different manner than today. Example: How to remove or at least reduce all the unnecessary stages in production. These being auxiliary work stages and moving of parts from one work station to the next one. In general, work stages that could be removed when two or more technologies were integrated into one single machine.

The first combi laser installed at a Finnish customer 1989 – TP 3000 with laser

1989 was the first year a combination machine made by Lillbacka Corporation (former name of Finn-Power Oy) was installed at a customer in Finland. The machine was a TP 3000 punching machine, where a laser unit was integrated.

In 1997, the product family L+P punch laser combi machines was introduced. Already then the manufacturing cell offered our four-in-one solution: punching, forming, tapping and laser cutting. At that time the punching unit was still hydraulic and the laser source was a Triagon® CO2 laser.

L+P laser punch machine from year 1997

New generation LP6 punch laser machine in 2006

eTechnology and Fiber Laser are Introduced

In 2008, the LPe6 servo-electric combi laser machine was born. The combi machine was now equipped with more efficient and energy saving servo-electric use.

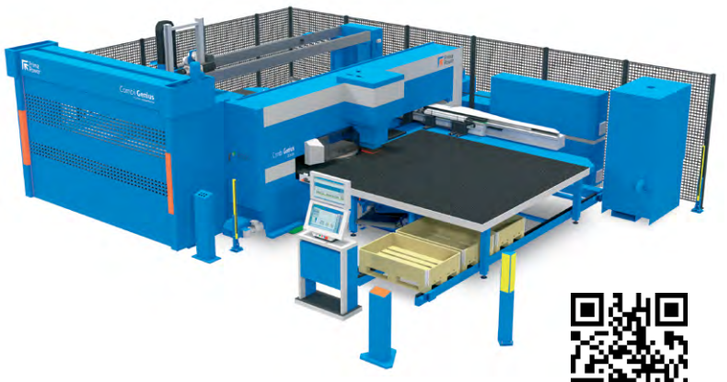
Two years later, in 2010, the LPe6f combi solution was introduced to the market. Now the laser source development was on a totally new level and fiber laser provided new benefits for manufacturing.

LPe6f punching and fiber laser cutting cell in 2010.

In 2015, the entire Prima Power product range underwent a design reformation from curved back to rectangular and also the naming of the products was unified. Now the names of e.g. combi lasers were formed according to three levels: Sharp, Genius, and Brilliance.

Combi Sharp was introduced in 2018 and it replaced the former LPex series combi lasers.

COMBI GENIUS® Today
A modern Prima Power combi machine uses numerically controlled, servo-electric axes, which provides outstanding energy efficiency, low maintenance requirement, and a high speed of operation. The cornerstones of its productivity include large tool capacity, the wide range of available tools, and easy and fast set-up change. As the best laser power source for the combi machine, the genuine fiber laser has a very high efficiency. Its highest utilization degree is suitable for material thicknesses less than 8 mm. Forming and other auxiliary work stages and ease of use are further factors reducing the manufacturing cost per component, thus making the combi machine a productive and competitive manufacturing solution.



Combi Genius with Compact Express automation

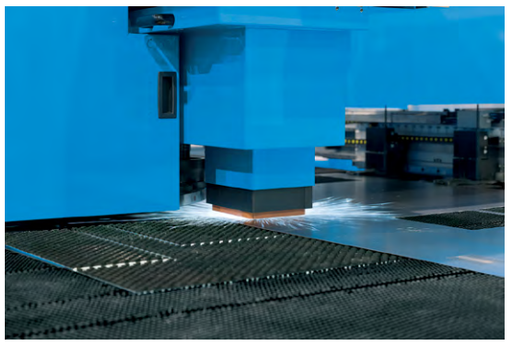
Scan to view video.

State-of-the-Art Fiber Laser Cutting
Combi Genius combines the benefits of this punching performance with the latest in fiber laser cutting, raising the productivity of the highly-versatile integrated manufacturing concept to a new level. As the laser source, the high-quality Prima Power CF fiber resonator of either 3 kW or 4 kW can be chosen. The optimized cutting head, collimator, transfer fiber, and cutting parameters ensure a very high cutting quality and speed.

An easy cover protection system around the machine is especially designed for the requirements of the combi machine. This provides protection from any scattered radiation of the fiber laser, but allows loading, unloading, and maintenance procedures for the operator as easy as possible.

The optimized cutting head, collimator, delivery fiber, and cutting parameters guarantee the highest cutting quality and speed for the Prima Power combi machine in the market.

Combi Genius includes many safety systems to improve cutting performance and reliability. Lens protection window LPW prevents dust and spots on the lens. Laser plasma monitor LPM follows the cutting process and restarts it if necessary. Lens condition sensor LCS follows lens condition and informs the operator when lens requires changing. For the laser-cut parts, two drop doors are provided as standard; 300 mm x 400 mm for quicker sorting and 800 mm x 800 mm for larger parts. New brushes on the chute top prevent scratches. From the drop door, the parts are transferred by conveyor to the side of the machine to be unloaded manually or forwarded with different conveyor and sorting solutions.



No Setups
The unbeatable tooling concept by Prima Power is a time saver – no extra stops for tool changes, no setups – all tools are active for immediate use.

- Customizable turrets
- Compatible with different tool manufacturers
- Multi-Tools®
- Index tools
- Intelligent ram

A totally re-designed turret can be customized and optimized for any requirement. Simultaneously, a record-breaking number of 384 tools can be inserted in the turret. The maximum number of index tools has also been raised to 128.

Proprietary Software
Combi Genius is operated with a modern control unit. Management of machine setup and work queues is easy with *Tulus®* user interface.

Prima Power has developed more software to ease both operator's work and order management. *TaskLoader, Tulus*

Continued on page 20

PRODUCT REVIEW

Prima Power Combi Lasers: 30+ Years of Expertise

Continued from page 19

MUPS, and *Tulus e-Kanban* are lightweight applications which, depending on the app, communicate with the machine and ERP and can be used with a smartphone or tablet.

Special attention has been paid to ease of machine setups and efficient programming. The benefits include excellent possibilities for roll forming and other special tooling.

Combi Sharp was introduced in 2018.

Scratch-Free Parts
A sheet floating system effectively prevents the scratching of sensitive materials. The movement is activated by the program when needed and special scratch-free punching mode is available.

Compatible Automation
A modern Combi Genius manufacturing unit can be equipped with several different automation equipment according to the need of customer's production. Available are different loading, unloading, and stacking robots, sorting units, and storage systems.

COMBI SHARP™
Integrated Punching and Laser Cutting at an Affordable Price
Combi Sharp, the little sister of Combi Genius, combines unbeatable punching performance with the latest in fiber laser cutting, expanding the productivity of the highly versatile integrated manufacturing concept to a new customer range. The optimized cutting head, collimator, transfer fiber, and cutting parameters ensure a very high cutting quality up to 8 mm material thickness.

Modularity is Power
In the core of the Combi Sharp is the Punch Sharp, a modular solution to grow to a combi machine if your future production directs towards more complex parts.

Easy Cover Protection System
New safety system allows easy access to the machine, manual loading of sheet and unloading of large parts and skeleton is convenient to perform. Combi Sharp can be equipped with Compact Express automation system for loading and unloading of sheets and ready parts.

Features and Benefits of the Combi Laser:

- High productivity due to versatility – "four-in-one"
- Punching, forming, marking, laser cutting – even bending; high speeds, ease of operation, minimum set up times
- A new Intelligent ram shortens tool change time and increases the number of tools in turret
- Small and compact layout even with automation modules
- The laser can also be used for cutting materials like copper or brass
- Small power supply connection and very low energy consumption due to servo-electric punching and fiber laser cutting technologies
- Inherently low maintenance cost
- No laser gas required
- High tooling capacity = fast setup and less waiting time
- Less energy = less CO2
- No hydraulic oil = no hazardous waste
- Lower heat and noise emissions = better for the operator and for the environment
- Less maintenance = increased productivity
- One cell instead of separate machines = smaller space requirement

For more information: primapower.com/the-combi/

Scan to view video.

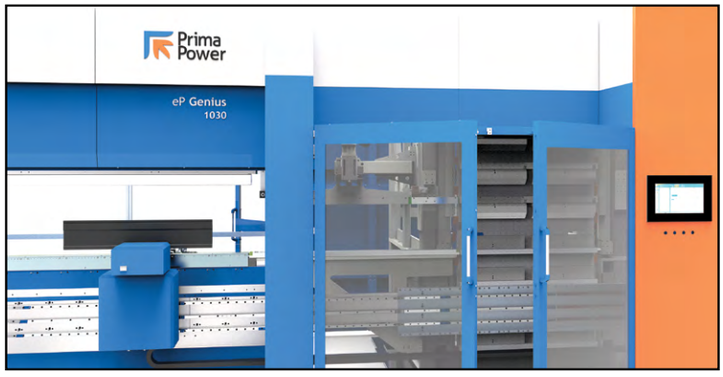
NEW PRODUCT

eP Genius 1030 Increases Reliability While Reducing Bending Cycle Times

The new eP Genius 1030 integrates a servo-electric press brake eP-1030 with an automatic tool change storage. The highly dynamic, accurate, and reliable servo-electric technology, granting constant performance over time thanks to the absence of hydraulic oil, combines with the benefits of a fast and dynamic automatic tool change system. The result is a more versatile, faster, and more reliable bending system, which eliminates the manual set-up of the machine and allows the operator to commit his time and skills to the preparation of the bending batches. This solution is especially fit for minimum batches, where it is possible to reliably estimate the machine set-up, and short cycle times become imperative to gain a higher market competitiveness.

Productive & Versatile Bending Solution

The eP Genius press brake has 15 axes and a maximum tool capacity up to 32 meters. The eP-1030 press brake included in the solution is the most versatile machine in the eP servo-electric range, a perfect combination of tonnage and work capacity (105 tons with a bending length of 3060 mm), automatic CNC crowning, 5-axis back gauge and IRIS Plus angle control system on CNC-controlled motorized arms. The tool storage, which is the main innovation of this product, can accommodate a total of 32 meters of tools to be placed on 8 tool holder supports that move on 3 axes. It is able to handle tools (Wila style) with a minimum length of 20 mm up to 515 mm. Furthermore, a rotating turret rotates the tools taken from the storage to grant multiple processing possibilities. The latest-generation user interface allows the programming of the piece in a simple and intuitive way, both on the machine and off-line, as well as the automatic management of the machine set-up.



Prima Power eP Genius 1030, servo-electric press brake with automatic tool change storage

CUSTOMER PROFILE

Fracking Equipment Manufacturer Turns to Laser for Flexibility

UE Manufacturing is a global supplier & manufacturer of oil field pumping equipment. The company offers a full product line of fluid pumping equipment that ranges from fracturing, cementing, and transfer units to cryogenic pumps.

UE Manufacturing, Oklahoma City, OK is a global supplier & manufacturer of oil field pumping equipment. The company offers a full product line of fluid pumping equipment that ranges from fracturing, cementing, and transfer units to cryogenic pumps. It also specializes in the remanufacturing and service of a wide variety of oil field pumping equipment. The company is dedicated to returning its customers' seasoned equipment back to the field like new. It offers numerous standard models with proven design packages or it can customize equipment to meet its customers' specific needs for both land and offshore applications.

UE Manufacturing equipment and quality products have been delivered throughout the oil field industry worldwide. Since its founding in 1994, the company has grown from a handful of employees to more than 425, with over 200,000 square feet of facility space.

According to Brent Finley, director of production & material management, prior to 2017, UE Manufacturing used to outsource a majority of its sheet metal fabrication. "We purchased the Platino 6kW Fiber Laser in 2018 to alleviate our dependence on outsourcing," explains Finley.

Platino Fiber Laser

The Platino Fiber Laser cutting machine is the perfect balance of innovation and experience. This product combines state-of-the-art efficiency 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, providing 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 visited three different laser manufacturers prior to our purchase. And the Prima Power laser had the most options and ease of use. It is a very impressive machine with a good price."

"We visited three different laser manufacturers prior to our purchase," says Finley. "And the Prima Power laser had the most options and ease of use. In addition, we really liked the NC Express software, the unique granite backstop for stability that nobody else had, and the gantry-style head. It is a very impressive machine with a good price."

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.

Brent Finley, director of production & material management, explains that the biggest justification for the Platino Fiber Laser was in the area of remanufacturing, where capacity was needed to react quickly to last-minute changes or repairs.

"We run the Platino Fiber Laser on the day shift, the night shift, and a weekend shift...we run it all the time."

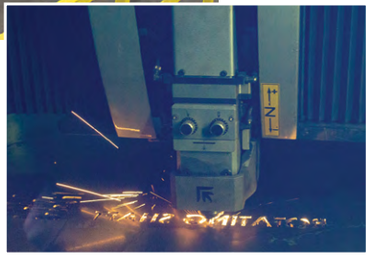
Remanufacturing & New Production

"We split the Platino Fiber Laser production time about 50/50 between remanufacturing and new production," continues Finley. "The biggest justification for the laser was in the area of remanufacturing. We needed the capability to react quickly to a last-minute change or repair in order to keep that unit on time and delivered to the customer in a timely manner. We run the Platino Fiber Laser on the day shift, the night shift, and a weekend shift...we run it all the time."

Other features and benefits include:

- Very low power consumption
- No laser gases
- Minimum maintenance and low consumables
- Floor space saving - compact automatic loading, unloading, and storage
- Easy and fast operating interface - fast setup
- Less energy, less waste of material, no laser gases
- Unique machine design using a synthetic granite frame offering the best thermal stability and vibration damping
- Cantilever design for maximum accessibility to the machine
- Protection cabin with roof, fiber-safe windows and fully-opening sliding doors: total safety, visibility of the work area and accessibility
- Single focusing lens system with automatic nozzle changer

The Platino Fiber Laser has been developed to maximize customers' competitiveness according to their application. A series of option suites is dedicated to the different production needs:
SMART Cut, for fast cutting of thin sheets (up to 5 mm) allows a reduction of the cycle times up to 30%.
MAX Cut, for the fast cutting of medium-thick gauge sheets, makes it possible to reduce processing times up to 40%.
NIGHT Cut, for intensive production, grants a higher piercing and cutting process safety.



The Platino Fiber Laser has a single focusing lens system with an automatic nozzle changer. According to Finley, from a quality and productivity standpoint, the automatic nozzle changer eliminates the possibility of someone forgetting to change a nozzle or putting on the wrong nozzle.

"If we had to outsource that part, it would take 4-5 days to replace. With the Platino Fiber Laser, we can have that part in a matter of hours instead of days."

Prior to acquiring the Prima Power laser, UE Manufacturing used to outsource a majority of its sheet metal fabrication. The company purchased the Platino 6kW Fiber Laser in 2018 to alleviate its dependence on outsourcing.

"We still do some outsourcing, but 75% of that work has come back inside," explains Finley. "When we remanufacture equipment, we may come across a bracket or other part that has cracked on a pump that we didn't notice that we didn't plan on replacing. If we had to outsource that part, it would take 4-5 days to replace. With the Platino Fiber Laser, we can have that part in a matter of hours instead of days. It allows us to keep our line moving. The laser is a big plus for that unplanned work that comes up during the remanufacturing."

Laser Features

"I like the fact that the Platino Fiber Laser can open from either the front or the side," says Finley. "If we have an issue or a small part, we don't have to shuttle the table. We can open the front of the machine or the side door and get directly to the table.

"The biggest benefit the Platino Fiber Laser has given us has been the ability to react and quickly turn parts to keep our production lines moving. This has been a real game changer for us."

The Platino Fiber Laser has a single focusing lens system with an automatic nozzle changer. "From a quality and productivity standpoint, the automatic nozzle changer eliminates the possibility of someone forgetting to change a nozzle or putting on the wrong nozzle," concludes Finley. "In addition, the laser does give us some flexibility to cut parts for some of our sister companies, even if the assembly part of the business slows down. But today, our staff is devoted to our internal production. The operators are really happy with it, and it is also very easy to train our personnel. However, the biggest benefit the Platino Fiber Laser has given us has been the ability to react and quickly turn parts to keep our production lines moving. This has been a real game changer for us."

CUSTOMER PROFILE

The Added Value of Automation

Tehnos, a Slovenian company specializing in the production of equipment for agricultural machinery, has built its success on a highly-automated production process made possible by a 15-year collaboration with Prima Power.

(from left) Marco Ghirardini, Prima Power area manager; Andrej Pelikan and Anton Kisovar, respectively production manager and founder of Tehnos; David Busan, agent for Prima Power.

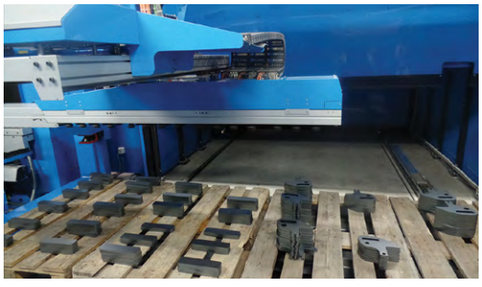
"Our main customers come from Northern Europe, Germany, and Holland, as well as Canada and some Asian countries including Japan," says Anton Kisovar founder and managing director of Tehnos, "while only 3% of our production is destined for the local market."

To these customers spread all over the world, Tehnos supplies a wide range of equipment to be installed on agricultural machinery. "We have over 80 items in the catalog," continues Kisovar. "However, specialized products are increasingly requested with customizations and modifications." The main product line includes shredders, sowing systems, fertilizer hoppers, specific equipment for the cultivation of asparagus, potatoes, etc.

A very wide range with a common denominator is the intensive use of sheet metal – mainly mild sheet steel with marginal quantities of stainless steel and aluminum that undergoes all the processing phases from cutting to bending, and from welding to painting. To achieve this, Tehnos has approximately 126 employees between the technical office, sales, and production. In this geographic area, there are great difficulties in finding qualified personnel. "Our technicians are experts and trained professionals," explains Kisovar. "However, we realize that it is increasingly difficult to find new employees with previous sheet metal working experience." Tehnos decided to face the challenge of increasing the level of automation by partnering with Prima Power, a comapny with which they have maintained a 15-year relationship. The relationship began with the purchse of a Prima Power Domino laser in 2005.

The Night Train system installed at Tehnos includes two Platino Fiber 1530 and a Combi Genius 1530, all equipped with LST sorting systems. A robotic bending cell is also being integrated.

"Investments in automation are also triggered by uncertainties for the future," continues Kisovar. "It is in fact necessary that they be carried out at times when business is prosperous in order to successfully face the challenges of tomorrow. And it is also important that the investments are carefully weighed. We have always visited trade shows, and we have realized that investing in obsolete technology is not profitable...so we aim for the top."



Prima Power's LST sorting system is able to palletize even pieces with complex geometries, thus allowing a fully automated production flow.

And that's why Tehnos doesn't just limit itself to investing in *stand alone* solutions, but chooses an integrated system for sheet metal processing capable of storing raw materials, picking it up for cutting, punching and bending operations, and managing both semi-finished products and scrap in total autonomy.

4 Machines, 1 Operator

The solution adopted by Tehnos was a Prima Power Night Train FMS, 45 meters in length with various modules combined with two 6 kW Platino Fiber lasers with a LST sorting system; a combined laser cutting - punching Combi Genius with a 4 kW source and sorting robot LSR, and a bending station in the process of being replaced with a robotized bending cell.

"The layout of the system is designed with an area dedicated to the loading of sheets," adds Andrej Pelikan, production manager of Tehnos. "Once loaded, they are placed by the Night Train in the vicinity of the machine where it will be processed. After the cutting and/or punching phase the semi-finished products are stored and prepared for bending and the scraps are picked up and transported to the end of the Night Train where the unloading area is located."

"The solution designed by Prima Power allows us to reach success rates between 80 and 90%. In the solution proposed by Prima Power, the robot enters the work area unloading a piece at a time, with the laser stopped. And, once the picking operation is completed, the laser starts working again."

The Night Train Flexible Manufacturing System allows optimal management of raw materials, semi-finished products and scraps, allowing a single operator to control all production.

The automation is not limited to the Night Train. In fact, in order to achieve their fullest potential, the laser and the combined machines are equipped with Prima Power loading/unloading systems and efficient sorting systems. "To make the production line particularly efficient," continues Pelikan, "the system for unloading and palletizing the processed pieces is available. The solution designed by Prima Power allows us to reach success rates between 80 and 90%. In the solution proposed by Prima Power, the robot enters the work area unloading a piece at a time, with the laser stopped. And, once the picking operation is completed, the laser starts working again."

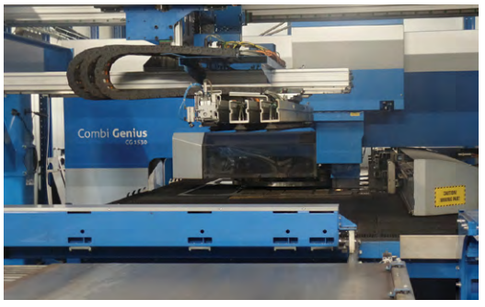
In addition to the 6 kW laser machines, the flexible production line is supplemented by a combined laser/punching system; equipped with a 4 kW fiber source, it has also been designed to reduce human intervention even in setup operations. The punching unit is equipped with an automatic setup for the clamps and the turret can have over 300 tools allowing it to work effectively on sheets up to 8 mm thick.

The last process connected to the Night Train system is bending, which is currently carried out with the help of manual press-brakes but which are being replaced by a robotic bending cell.

"We are very proud of the flexible production system," concludes Pelikan. "It has allowed significant increases in productivity with a minimum expenditure of resources. A single operator can manage loading and unloading of material, parts, and skeletons on the the Night Train, and perform punching set-up.

From Sheet Metal to Finished Product – All Connected

Great effort has been placed, not only in equipping Tehnos with cutting-edge machines and systems, but also in making sure that they are connected to the ERP. It is thus possible to view the entire progress of production and the planned operations, obtaining an updated view of the state of use of the machines, of the pieces produced, and of the planned operations.



The 4 kW fiber source and the punching unit with over 300 tools allow the Combi Genius to process sheet metal up to 8 mm.

"Prima Power has proved to be a winning choice, not only for the performance of the machines, but also from the management point of view, putting at our disposal a solution that, by integrating with our software, allows us to have constantly under control the state of production and planning."

"Prima Power has proved to be a winning choice, not only for the performance of the machines," says Pelikan,"but also from the management point of view, putting at our disposal a solution that, by integrating with our software, allows us to have constantly under control the state of production and planning. "

Tehnos specializes in the production of equipment for agricultural machines such as shredders, systems for sowing, and hoppers.

CUSTOMER PROFILE

New LASERDYNE® 430 Systems Improves Fiber Laser Welding and Leads to Higher Quality at Ace Precision

"Fiber laser welding is all about control of the process," states Kurt Magedanz, laser process engineer at Ace Precision Machining Corporation, Oconomowoc, Wisconsin. With the new LASERDYNE® 430 systems, Ace Precision has made huge strides with its weld quality while reducing operator intervention in the process.

Ace Precision Machining Corporation improved its fiber laser welding operations with two new LASERDYNE® 430 systems improving weld quality and eliminating welded assembly rework..

Ace Precision Machining Corporation, AS9100 Certified, is an internationally recognized supplier to the aerospace, power generation, and defense industries, offering extensive manufacturing capabilities encompassing all areas of metal fabrication, joining, and coating. The company's laser welding capabilities recently took center stage when Ace Precision initiated a new welding process on one of its two recently acquired LASERDYNE 430 fiber laser systems.

Traditional welding methods, still prevalent in today's manufacturing, require significant operator attention to control weld quality. That has changed for the better with the power now available with fiber laser and the proprietary integrated Prima Power Laserdyne S94P CNC control.

"We experienced significant rework on the welded assemblies and needed to replace the laser lenses frequently until Prima Power Laserdyne came forward with its greatly improved system and process."

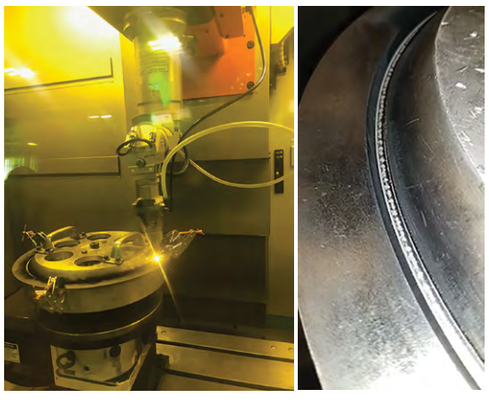
"We now have maximum control over the welding process compared to before," explains Magedanz. "Previously, we used a CO2 laser system that didn't have weld-specific hardware or software. We experienced significant rework on the welded assemblies and needed to replace the laser lenses frequently until Prima Power Laserdyne came forward with its greatly improved system and process."

The challenging two-part welded assembly that inspired this improved process was for a military application. With an approximate 12-inch diameter final assembly, the critical welding operation required a contoured, overlapping seam weld of a circular 0.060-inch thick Hastelloy X sheet metal part onto a machined Hastelloy X component. Keeping the weld seam consistent in width and depth without voids between the two parts was critical.

"With our new LASERDYNE 430, the S94P laser processing camera system allows us to pinpoint the exact location of the weld seam on the Hastelloy X material. That allows us to fine-tune our position before the welding process begins."

"With our new LASERDYNE 430, the S94P laser processing camera system allows us to pinpoint the exact location of the weld seam on the Hastelloy X material," says Magedanz. "That allows us to fine-tune our position before the welding process begins. With our old CO2 system, the component fit-up and fixturing were more critical to producing consistent welds. The new machine controller's orbiting function, which oscillates the machine axes at a specific commanded size and frequency, allows us to precisely control the characteristics of the weld joint.

"The new LASERDYNE 430 fiber laser system has eliminated virtually all rework of parts that we used to encounter on the CO2 system, especially at the start/stop point of the weld. The particular configuration of the components that were welded places the weld bead right up against the edge of the material and there is very little margin for error to avoid burning the edge of the part. The ability to precisely control the fiber laser's power, position and focus along with the system's SmartRamp™ function, has made it possible and easier to control the laser welding process."



Two part Hastalloy® X assembly pictured left during the automated welding process.The new LASERDYNE 430 system precisely controls the power, position, and focus for a perfect end result without cracks or voids in the weld structure.

"Our previous welding process with its combination of fixturing and assembly requirements didn't have enough precision to exactly pinpoint the true focus position repetitively," continues

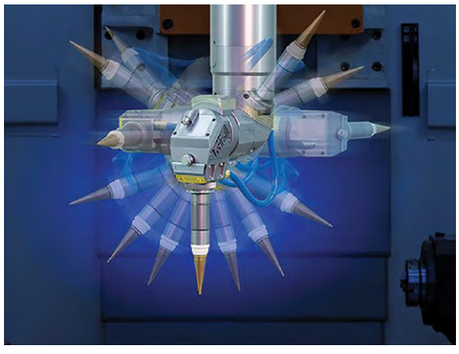
Magedanz. "The new OFC2 ABSOLUTE™ feature has superior mapping run-out with the new software allowing for accurate and repeatable focus positioning. This helps us to precisely position focus on the weld joint of every part and we know that it is correct."

Earlier, multi-process laser systems for cutting, drilling, and welding were only adequate for welding, but these new LASERDYNE 430's have new features designed just for the challenges unique to welding, as well as providing superior cutting and drilling. The systems feature weld ramping, gas flow control, lens protection, and an integrated air knife that makes the welding process more controllable for a superior end result.

Ace Precision's new LASERDYNE 430 systems, OFC2 ABSOLUTE software feature provides unbeatable accuracy when it maps the weld surface. It does this to maintain the laser beam focus at the precise location of the laser weld so there are no deviations or voids in the weld structure. Also, OFC2 ABSOLUTE has a long working range so that the location of reference features such as edges, corners, holes, etc., can be determined using a greater, more generous stand-off between the laser processing head and workpiece providing no interruption of the process.

The LASERDYNE 430 system is equipped with a 20kW QCW fiber laser and the proprietary Prima Power Laserdyne BeamDirector®.

While the 20kW laser is most widely used for cutting and drilling, Prima Power Laserdyne's proprietary software allows the laser to be effectively used for welding applications.



Prima Power Laserdyne's BeamDirector® is the most advanced 3D beam delivery in the world. A full 5 axis motion utilised the work envelope most efficiently.

The BeamDirector uniquely provides two additional axes of motion to the moving table design for the LASERDYNE 430. Precision welding comes not only from the performance and accuracy of the LASERDYNE 430 motion system, but also from advanced Prima Power Laserdyne exclusive SmartTechniques™ that allow the fiber laser to effectively perform a full range of welding tasks, specifically Ace Precision's complex welding of military components. Both the capacitive and optical methods of focus control precisely guide the motion system, maintaining critical focus position and following the contour of the part regardless of surface irregularities. All linear axes of the system react to sensing of the part surface, creating unlimited correction along the axis of the beam. The combination of crash protection and part sensing gives the Ace Precision system operator confidence to use aggressive processing speeds without fear of damaging the system or scrapping the part.

"Now with SmartShield features, welding precision is ensured and costly lens replacement is minimized with the additional advantage of reducing machine downtime."

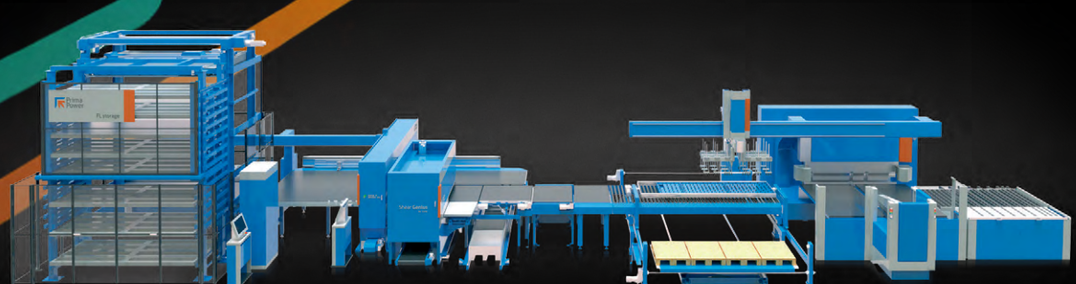
"The weld head itself is another system feature we needed," states Magedanz. "We had limited lens protection with the CO2 system we were using. We'd complete two or three part runs and then need to replace the lens. With our latest LASERDYNE 430 systems, the air knife feature incorporated in SmartShield™ blows air down and across the lens to keep it effectively free from weld spatter and debris while cooling the lens. The air knife creates an invisible barrier so contaminants are kept from depositing on the lens. Now with SmartShield features, welding precision is ensured and costly lens replacement is minimized with the additional advantage of reducing machine downtime."

Prima Power Laserdyne's BeamDirector assembly contains the weld head with integrated air knife. Lens protection is ensured with the air knife function for cooling the lens and deflecting weld debris.

Ace Precision also acquired a Prima Power Platino Fiber Evo laser system about the same time it acquired its two LASERDYNE 430 fiber systems. The Platino gives Ace Precision increased performance for its flat sheet metal processing with reduced piercing times and increased cutting speeds, especially on thick material.

"Acquiring those three machines really helped make our laser operations more efficient and productive when we really needed it," concludes Magedanz. "Acquiring new fiber systems from the same manufacturer is efficient, cost effective, and ensures a high level of service continuity that is very important to us and our customers."

Agility is Power



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