

CUSTOMER PROFILES

NEW TECHNOLOGY

PRODUCTIVITY

FLEXIBILITY

# POWER LINE

2022  
ISSUE 01

VOLUME  
#14



## RESPECT THE PLANET, SUPPORT BUSINESS.

DISCOVER THE POWER  
OF SUSTAINABLE  
MANUFACTURING



POWER LINE is a Prima Industrie publication.



 Prima  
Power

The logo for Prima Power, featuring a stylized white arrow pointing right, is positioned to the left of the company name. The name "Prima Power" is written in a large, white, sans-serif font on the living wall.



# PLANET, PEOPLE, PROFIT: A PRAGMATIC APPROACH TO SUSTAINABLE MANUFACTURING.

The 2030 Agenda for Sustainable Development launched by the United Nations reminds every company of the urgency for solutions to meet the great challenges of our time and to ensure positive impacts on the environment and on people.

The manufacturing sector plays a crucial role in achieving these goals, and operators like us have a responsibility to contribute to making our business increasingly sustainable. Moreover, companies that provide innovative production technologies, such as ours, must also commit to designing and manufacturing systems that make it possible for everyone to produce in a way that is equally sustainable and profitable.

In a sustainable company, care for the environment, social commitment and profitability – the “3 Ps” of the modern bottom line: Planet, People, Profit – coexist in harmony, thanks to efficient use of energy and natural resources, attention to the interests of employees and the community, and systems and processes that allow for economic solidity at the same time. In the complex, evolving and geopolitically unstable reality we find ourselves in today, pragmatism and responsibility are more important than ever.

This requires an extremely concrete approach to sustainability, not based on slogans and unattainable promises but on daily practices, with attention to every factor that affects production efficiency and therefore consumption.

The essential balance between environmental and social issues and companies’ profitability is the central theme of this issue of the *Power Line*, under the title “Respect the planet, support business” – developed, as always, in our cover story and throughout the articles in the magazine.

This issue’s customer stories focus on companies that, using our technologies and partnership approach, were able to overcome the emerging challenges of the manufacturing world, in which sustainability undoubtedly plays a key role. As you will see, we are showcasing very different companies that all share a common trait: the ability to remain competitive by providing products with high-added value, manufactured in a responsible way.

**Ezio Basso**  
CEO *Prima Industrie*

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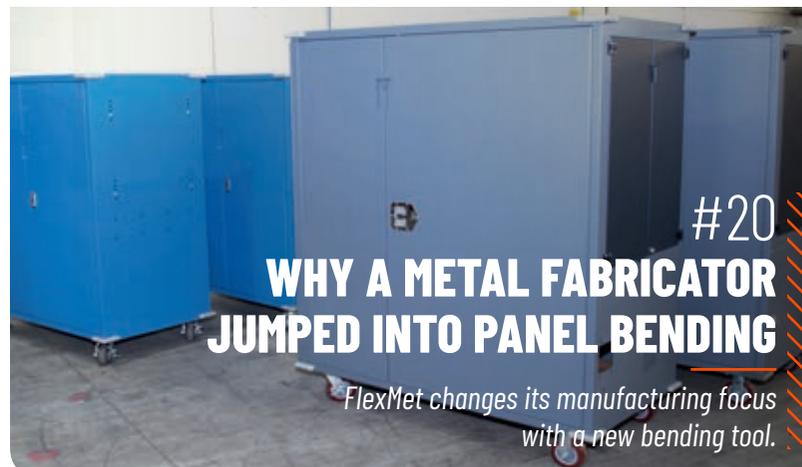
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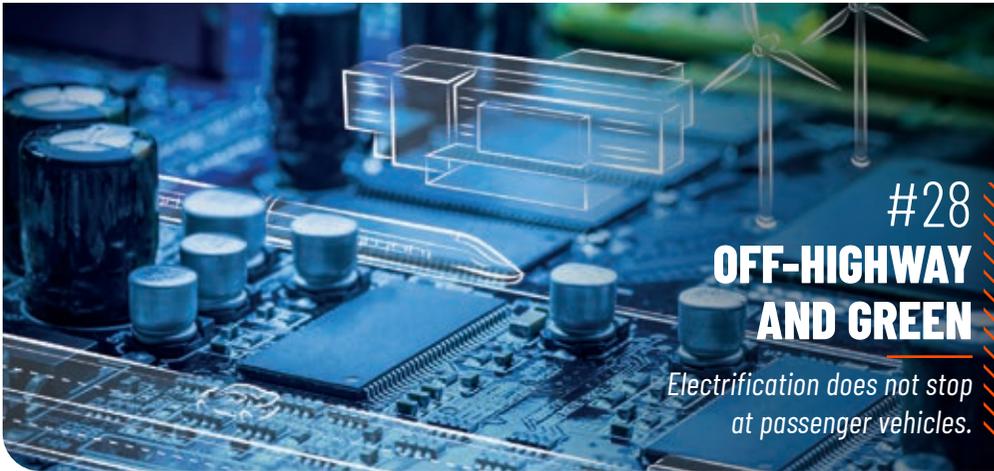
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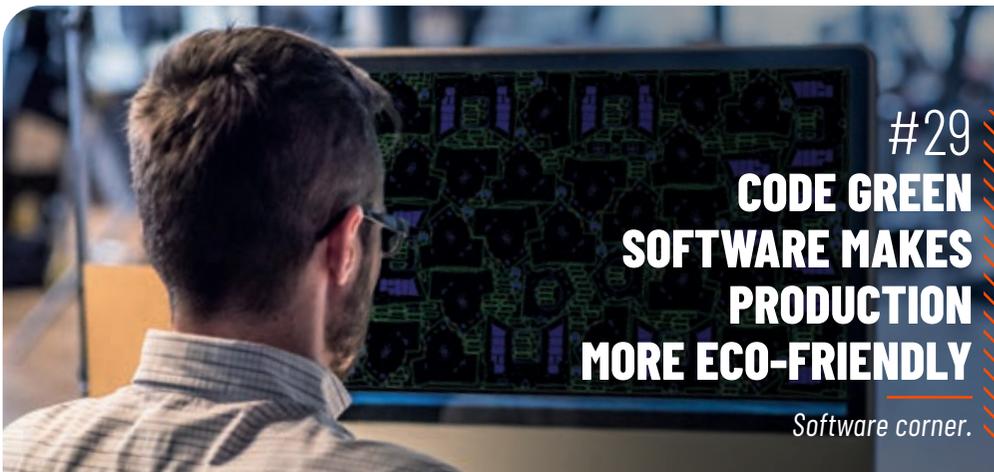
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# RESPECT THE PLANET, SUPPORT BUSINESS.



DISCOVER THE POWER  
OF SUSTAINABLE MANUFACTURING

## SUSTAINABILITY: MORE THAN JUST A WORD

In this age of remarkable social and economic changes, one word dominates the global debate as well as the ongoing reflections by individuals, businesses and institutions: sustainability. A shared process is engaging, for different reasons, a wide range of players in the name of the same objective: to find the useful solutions we need, to guarantee a more equitable and sustainable progress.

This is especially true in the manufacturing industry, which is one of the sectors most often tasked with finding effective ways to continue to ensure certain goods and services while, at the same time, avoiding harmful impacts on the environment. However, if we don't stop to think about the complexities embedded in the very concept of sustainability, we risk suggesting easy fixes that merely cover up the problem, and do nothing but give the appearance of sustainability. The issue is so important and the dangers we face in environmental and economic terms are so great, that we must analyze with clarity the definition of sustainability.

It is only by facing the issue with a practical and sensible approach that we can win this challenge in an effective and timely way.

## SUSTAINABILITY AND MANUFACTURING: AN INDISSOLUBLE PAIR

"Sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs."

This definition may sound perfectly current, yet is taken from the Brundtland Report presented as far back as 1987 by the World Commission on Environment and Development. Talking about sustainable development helps us highlight the key aspect in question: there can be no authentic sustainability, if we don't consider productive activities, economic development and growth.

Therefore, sustainability can exist only if it is able to ensure the needs of the present generation are met without compromising the possibility of future generations to meet their own. Excluding the issue of economic sustainability from the debate turns a just cause into a lost cause.



ONLY BY RESPECTING  
THE COMPLEX NATURE  
OF SUSTAINABILITY WILL  
WE BE ABLE TO WIN THE  
CHALLENGE THE FUTURE  
ASKS US TO FACE

## SUSTAINABLE MANUFACTURING MAKES BUSINESS SENSE

The answer to what may seem like an impossible dilemma lies in the concept of sustainable manufacturing that has emerged in recent years: a type of production capable of creating products through sustainable economic processes which – thanks to research and technological innovation – are able to minimize negative environmental impacts and allow for savings in terms of both energy and raw materials. Sustainable manufacturing is characterized by a pragmatic and willing approach to do its part, proving strong awareness for environmental issues. Indeed, by investing in scientific and technological research, it strives to come up with solutions designed to optimize production cycles by focusing on process efficiency, with the aim of saving materials and energy without affecting the quality of the final output. In line with a win-win logic, it simultaneously guarantees both a lower environmental impact and a saving of resources, which in turn lead to economic savings for manufacturers.

A business that strives for sustainability cannot forget the people it interacts with, both within and beyond the company. A sustainable organization will have to make all the supply, installation, assistance and consultancy actions it offers efficient and smart. Intelligent machines, linear processes, easy-to-use software, ergonomic workstations, intuitive and user-friendly interfaces are essential tools for workers' health and psychological and physical wellbeing, while providing a more efficient and cost-effective production.

## AN ACHIEVABLE GOAL

Manufacturing is one of the most energy-intensive industries and has one of the biggest impacts on the environment. Therefore, we must design and implement solutions that minimize energy impact without a decrease in production standards. Planning and optimizing processes throughout the entire production chain is crucial to achieving this goal. Performing testing phases and feasibility estimates in a virtual mode, thanks to digital twins, in order to go from design to finished piece without wasting energy and materials; constantly monitoring the various production phases to promptly correct any errors; designing simple machines made up of the fewest possible components: these are some of the practices that allow for a tangible and substantial saving of time and lower waste of material. In a nutshell, they save energy and therefore save money. One of the most efficient solutions for the optimization of production processes is the creation of systems, where several machines, each with a specific function, integrate into automated production lines to obtain the desired result by minimizing waste of material and energy. Solutions that are flexible and agile make a crucial contribution to eliminating the risk of so-called system redundancy, i.e. the overlapping of production phases that is one of the most frequent problems in the manufacturing sector. The general trend is to implement so-called energy minimalism, i.e. to try to obtain maximum production with minimum energy expenditure.

## DIGITALIZATION IS AN IRREPLACEABLE ALLY

While the pursuit of the greatest possible efficiency has always been the goal of every industrial business, we must note that today, companies' efforts to achieve it are greater than ever.

Process optimization and digital transformation offer critical help in this sense. It is a widespread and shared opinion that there can be no transition towards a truly sustainable economy without a massive effort for digital transformation as well.

That's the concept of the so-called twin revolutions, which refers to the two great axes on which the entire energy transition hinges: the green transition and the digital one are the two tracks along which the new manufacturing industry must travel to reach the goals ahead, also in the light of the opportunities deriving from public resources made available to recover from the pandemic and to modernize the economy in general. The development and use of increasingly advanced software, the role of applied artificial intelligence, the collection and analysis of big data are some of the areas in which any industry must believe and invest,

to really project into the future. From this point of view, the digital transformation enables the green transformation, not vice versa.

## A CHALLENGE TO BE WON

Thus, to implement an authentic sustainable transformation, a crucial synergy must form between constantly evolving digital technologies, new levels of process engineering, a strong infrastructural upgrade and real care for workers.

Far from empty rhetoric, sustainable manufacturing is an opportunity we cannot afford to miss in order to study and implement solutions with extremely positive repercussions. It should be seen as an excellent accelerator, capable of guiding today's companies into a promising future from both environmental and economic perspectives.

Only by understanding sustainability as a complex, organic and integrated process will we be able to find the equilibrium between production needs and the wellbeing of the planet, and win the demanding and exciting challenge that the future asks us to face.



**SUSTAINABLE MANUFACTURING IS IN LINE WITH THE WIN-WIN LOGIC OF SAVING MONEY AND REDUCING OUR IMPACT ON THE PLANET AT THE SAME TIME**

# SUSTAINABILITY ADDS UP

## THE CIRCULAR ADVANTAGES OF ADDITIVE MANUFACTURING

AM limits the use of material and allows for the recycling of powders. New pieces can be designed with optimized geometries, and existing components can be repaired, avoiding further use of resources and energy for the production of new parts.

Ecological transition, increasingly fragmented supply chains, rising costs of energy and raw materials: these are just some of the great challenges that the world of industrial production must face today. Solutions that address them will be crucial for the future.

Additive manufacturing (AM) of metal offers an ideal answer to emerging needs by allowing for the creation of new business models and helping make production more sustainable.

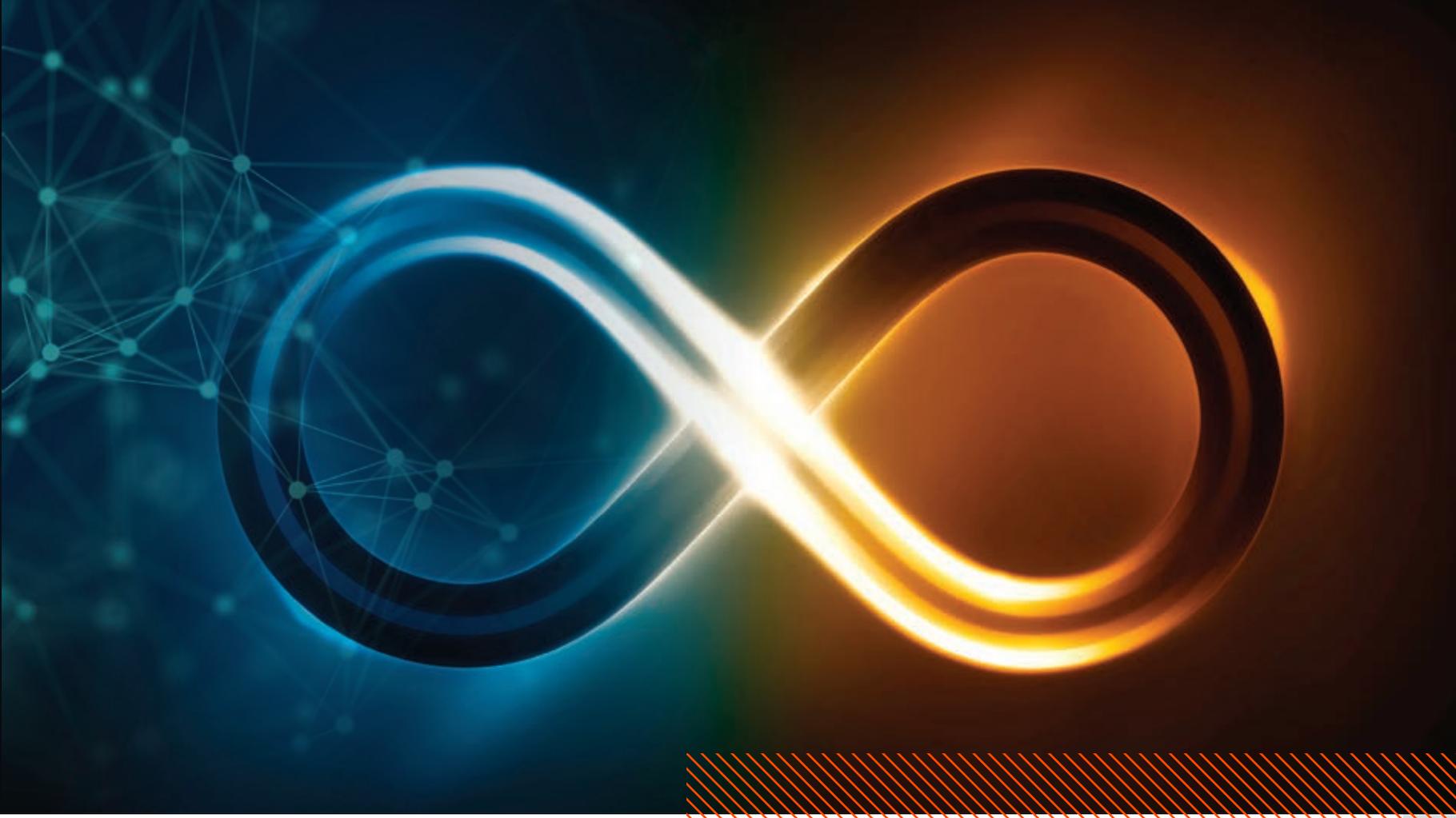
### THE MANY BENEFITS OF AM

This technology enables the so-called “on-demand production”, with the possibility of creating complex metal parts and making only what is needed, when needed and where it is needed – thus reducing resource use and logistical costs, optimizing the supply chain.

Compared to the traditional removal process, AM limits the use of the raw material to the quantity necessary for the piece and allows for the recycling of any powders used in production, significantly reducing waste.

Furthermore, AM technology also improves the final product’s sustainability. Pieces can be designed with optimized geometries that make them lighter and easier to dispose of, while keeping the same functionality and mechanical characteristics. With AM technologies, components can recover their function or be repaired, avoiding further use of resources and energy for the assembly or production of new parts. This is perfectly in line with the circular economy model, which involves reusing, repairing, refurbishing and recycling existing materials and products for as long as possible.





#### TODAY AND FOR THE FUTURE

For example, in aerospace – one of the first sectors to embrace this technology – parts made with additive manufacturing are shown to improve aircrafts' functionality while reducing their weight, therefore curtailing fuel consumption and greenhouse gas emissions. The same is true in the automotive sector, where electrification tends to increase the weight of vehicles and makes it necessary to find new solutions to counterbalance the effect in order to increase efficiency.

Whatever the sector or application, additive manufacturing of metal contributes to a more sustainable approach. That's why Prima Additive's goal is to make this technology increasingly competitive, offering clients a profitable solution to face the challenges of our times.



*The layer-by-layer creation process of metal additive manufacturing provides freedom of design that is unthinkable with traditional metalworking technologies.*

*Metal Additive Manufacturing is an innovative technology that requires all-round competent support.*

# A RECIPE FOR SUSTAINABLE AND SMART GROWTH

## STEELCOMP INVESTS IN A NEW FACTORY WITH **ADVANCED AUTOMATION**

**STEELCOMP OY WILL CONTINUE ITS STRONG PRODUCTION DEVELOPMENT WORK IN ITS OPERATIONS IN KAUHAVA, FINLAND. WITH A NEWLY-COMPLETED PLANT EXTENDING OVER MORE THAN 5,000 SQUARE METERS AND EXTENSIVE INVESTMENTS IN PRIMA POWER PRODUCTION AUTOMATION, THE COMPANY IS ON THE ROAD TO STRONG GROWTH FOR YEARS TO COME.**

Steelcomp's momentum continues. The company, which started in 2006, has grown into a group employing about 100 metal professionals, across operations in Kauhava, Vaasa and Vähäkylä in western Finland. Steelcomp Oy's net sales totaled approximately €8.7 million in 2021, and Steelcomp Vaasa Oy's were €10.8 million. "Steelcomp has always relied on bold moves in its operations, and that means investing in both technology and expansion," says Kimmo Niska, the company's founder, President and CEO.

The big leap forward for the company was the acquisition that led to the creation of another Steelcomp unit in Vaasa, 10 years ago. Hence, Steelcomp became the group that now includes both Steelcomp Oy and Steelcomp Vaasa Oy. "In Kauhava, we subcontract extensive sheet metal production, and in Vaasa, the core is contract manufacturing, welding, surface treatment and assembly with stages, often for international players," Niska concludes.

### A NEW PRODUCTION SPACE OF 5,300 SQUARE METERS

The Steelcomp Group is currently renewing its technology in line with its long-term strategic guidelines. A new round of investment is allowing it to take another step along its journey: according to the principles it has followed since the beginning, the goal is to increase automation in production.

"Today, automation is becoming a key success factor in the

industry. Automation is a crucial element in production efficiency, it increases competitiveness in the market and it also alleviates the challenges related to the bigger issue – that is, the availability of skilled labor. Indeed, an important image factor comes into play, because automation increases the company's attractiveness both for customers and for top production professionals," says Niska.

To enable a fresh investment round focusing on automation, Steelcomp has recently relocated its operations in Kauhava to new 5,300-square-meter premises, a project implemented together with the City of Kauhava. The new area will allow for new extensions in the future. "The location is great, right along the main road, and the facilities are tailored to our needs. There is enough light and space, and we addressed one aspect of job satisfaction by dividing the production space into two parts, which can affect the transmission of sound. The lightweight wall structure we added strongly isolates the sound-producing sheet metal work center area from the bending and assembly area," says Niska.

Environmental issues have also been taken into account.

"The new plant is energy efficient; it heats with low-emission energy, and – just to mention one example – we carefully utilize the heat generated by the machines," says Kukka-Maaria Kenkkilä, Development Manager.

#### AUTOMATION TECHNOLOGY FOR FUTURE PRODUCTION

The move to new premises has made it possible to invest in new production technology. Steelcomp Oy is currently strengthening its production machinery with specific investments, and the first units have already arrived at the new plant.

The new facility allowed Steelcomp's plant to invest in Prima Power's Night Train FMS automated storage system, a flexible and modular storage solution to automate the material flow. The system installed at Steelcomp is more than 50 meters long and has a total capacity of over 400 drawers. It automates the material and information systems of the factory's cutting and punching operations and combines the individual manufacturing steps into one process. In addition, the warehouse is very space efficient.

Four machine units in the punching and cutting sector will be connected to the system in the future, thus enabling even more efficient automated production.

Automation increases the company's attractiveness both for customers and for top production professionals.

In connection with the Night Train, existing machinery and two completely new production units will be integrated in the new location. Already in place at the new plant is the Prima Power Shear Brilliance, a combined punching and right-angle shearing system capable of processing plates up to four meters.



At the beginning of the year, Steelcomp installed a Prima Power's SB8 punching + right angle shearing system in its new factory. A Combi Genius machine combining punching and laser cutting will arrive in the fall. Kimmo Niska, President and CEO, and Kukka-Maaria Kenkkilä, Development Manager in front of the first system just installed.



**Above:** The new Steelcomp premises are 5,300 square meters in size.  
Photo by Jääskeläinen Architects.

**Bottom:** Prima Power's Night Train FMS automates a facility's material and information systems and combines individual manufacturing steps into one flexible process. In Steelcomp the Night Train is connected to two combined servo-electric machines (one to be installed soon).



The composite materials, the servo-electric technology and the linear drives all contribute to enabling high-performance yet ecological production work. Prima Power's ECOPUNCH® concept is an astonishing money saver in terms of energy consumption, making it possible to manufacture more parts with the same energy.

Another new machine for the manufacturing line will arrive in the fall: Prima Power's 4-kW Combi Genius, which combines punching and laser cutting functions in one machine. In total, Steelcomp's investment in machinery and equipment is over three million euros. *"The new factory and recent technology investments will enable the company to grow in the future, which always remains our goal. At the same time, the new plant and investment will create new jobs, and we aim to increase the number of employees by at least 20 new professionals in the near future. Recruitment is underway,"* says Niska.

In the next few years, technology development will continue at Steelcomp Oy, especially in regard to bending operations. *"Substantially increasing automation is a key goal in this sector as well,"* says Niska.

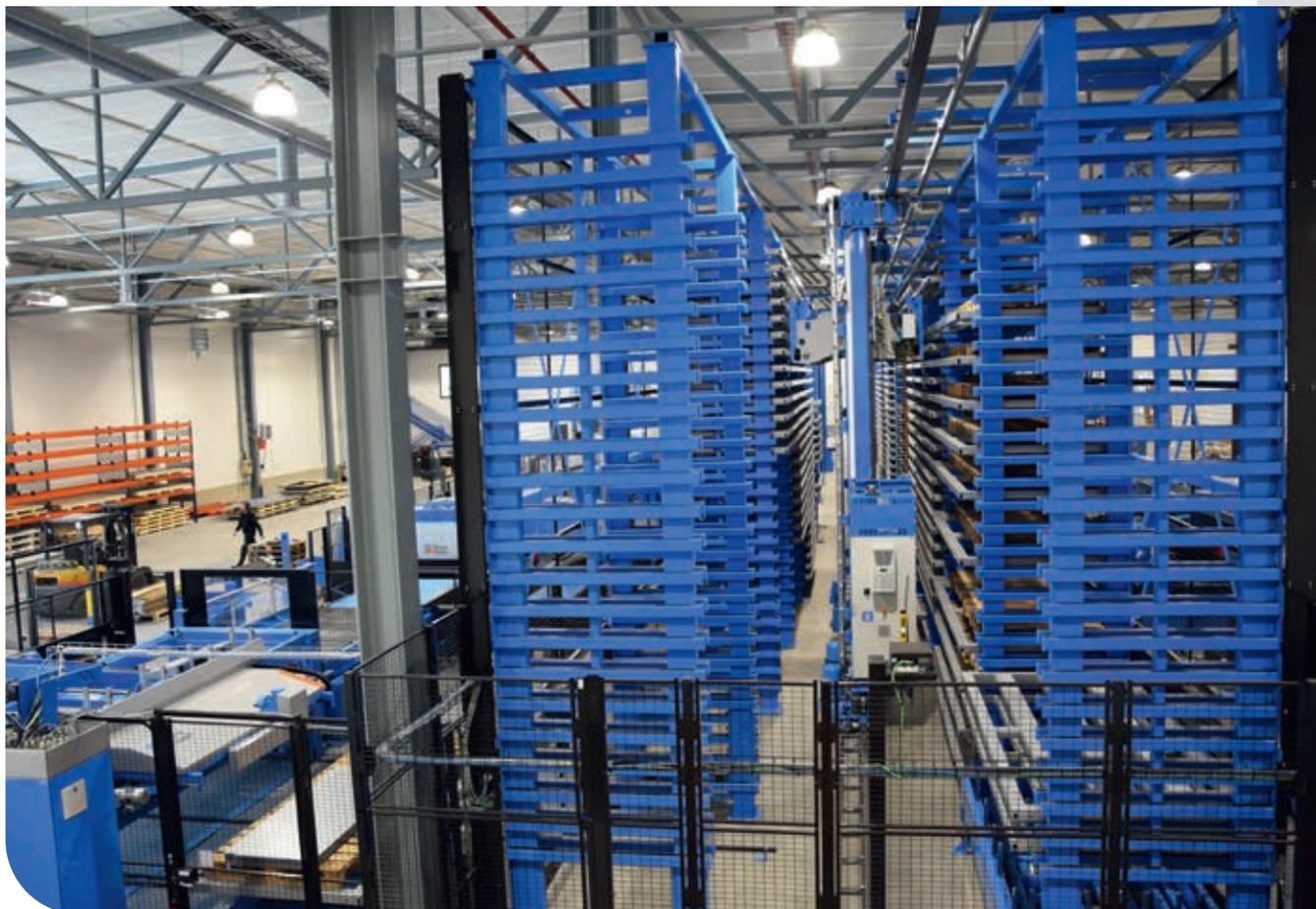
*The new facility allowed Steelcomp's plant to invest in Prima Power's Night Train FMS automated storage system, a flexible and modular storage solution to automate the material flow.*



The article, written by Kari Harju, was first published in Finnish trade magazine Konekuriiri ([www.konekuriiri.fi](http://www.konekuriiri.fi)).



*The large Night Train system automates the material and information systems of the factory's cutting and punching operations, combining individual manufacturing steps into one process. It features over 400 storage drawers.*



# THE POWER OF THREE

## THE ECO-EFFICIENT CELL WITH PANEL BENDER, PRESS BRAKE AND INDUSTRIAL ROBOT

**MOST ORGANIZATIONS TODAY CLAIM SUSTAINABILITY IS ONE OF THEIR CORE VALUES, YET IT IS NOT SO COMMON TO FIND COMPANIES THAT ARE ABLE TO SET BETTER STANDARDS FOR ENVIRONMENTAL PROTECTION WITH THEIR PRODUCTS. SCHULTHESS MASCHINEN AG IS ONE OF THESE FEW GAME CHANGERS, THANKS TO ITS EXCEPTIONALLY ENERGY-EFFICIENT WASHING MACHINES AND DRYERS.**

The company, located in Wolfhausen, Switzerland, manufactures its sustainable products using an innovative bending solution by Prima Power, which combines a high level of automation with high efficiency – thus allowing end customers to reduce emissions even before the purchase, during the manufacturing process. Michael Winkler, Production Manager at Schulthess, tells us more about the successful cooperation between the two companies.

### 150+ YEARS OF EXPERIENCE

Schulthess has been Switzerland's leading washing technology group since 1845 and produces high-quality machines, systems and system solutions for private, commercial and industrial clients. Offering outstanding, durable technology – such as lye tanks made of chrome steel – today this traditional company sets the benchmark in performance and functionality in over 25 countries, from Chile to China.

Schulthess is part of the NIBE Group, a global organization that develops and manufactures intelligent, eco-friendly,

energy-efficient indoor comfort solutions for all types of properties. With approximately 20,400 employees around the world and over 30 billion Swedish kronor (2021 data) in generated sales, NIBE provides solutions that contribute to a lower carbon footprint and better utilization of energy.

*"With our core competence in sheet metal production and assembly, we deliver 36,500 machines per year," says Winkler. Going forward, he promises, "With our completely new, combined plant, we will ensure that there will be even more."*

In 2018, Prima Power delivered a robotic bending solution to the Schulthess factory in Wolfhausen. *"Our clients are highly satisfied with our products, and this makes Schulthess confident to start producing even more machines utilizing the bending solution proposed by Prima Power,"* Winkler adds. In fact, at Schulthess, everybody believes in a fully-automated future: the company realized that a complete bending solution was ideal to improve production, especially in the face of a shortage of skilled labor that seems to become only more severe and widespread with time.

*At Schulthess, everybody believes in a fully automated future: the company realized that a complete bending solution was ideal to improve production.*

### A SHARED AND COMMON PROJECT

One of the reasons why Schulthess got in touch with Prima Power was to find connected solutions to facilitate unmanned operations. As an innovator in the washing machine industry, Schulthess was also forward-thinking in looking for a future-oriented system that could be used longer over time and cover the entire production flow. After several visits and factory tours, everybody came to the same conclusion: the decision to develop something new with the help of Prima Power, the only company that could intelligently combine three different machines into one bending system with the highest automation level.

The automatic bending system consists of a servo-electric EBe4FM panel bender with a PCD (Picking & Centering Device) complete with double and scissor wagons and a BTD (Bending Turning Device), an eP0520 press brake with 5-axis back gauges, a 7-axis industrial robot sliding on rails to automate the process between EBe4 and eP0520 and one palletized conveyor area with automatic pallet feed and press brake ATC automatic tool change set-up.

/// What we like the most is the fact that the whole system is extremely flexible!



*"The three elements – panel bender, press brake and robot – integrate perfectly in one cell," explains Winkler, who is proud to add: "This is a truly unique bending solution with a panel bender, a robot and an integrated press brake. But what we like the most is the fact that the whole system is extremely flexible! Schulthess's decision on this project was to make complex processes – such as sheet metal manufacturing and assembly – much simpler, with intelligent automation derived from precise bending and advanced automation technology."*

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*Michael Winkler, Production Manager at Schulthess, Swiss leader in washing technology, in front of Prima Power robotic bending solution.*





The automatic bending system installed at Schulthess consists of a servo-electric EBe4FM panel bender, an eP0520 press brake, a 7-axis industrial robot sliding on rails, and one palletized conveyor area with automatic pallet feed. Here, a part is being overturned by the EBe's Bending Turning Device for centering on the Picking & Centering Device.

#### OUTSTANDING EFFICIENCY WITH SERVO-ELECTRIC TECHNOLOGY

Another decisive aspect for Schulthess, which is deeply oriented towards respect for the environment and any consequent sustainability issues, was the highly-efficient servo-electric technology in use in all Prima Power bending machines (panel benders and press brakes).

/// *Go Clean Go Green is more than just a motto for us. We live and breathe it.* ///

Winkler recalls, "At Schulthess, CEO Thomas Marder and CFO Martin Keller – who are also both owners of the company – give particular importance to the sustainability philosophy: *Go Clean Go Green is more than just a motto for us. We live and breathe it. The fact that the machines are non-hydraulic solutions is attractive in terms of lifecycle costs because they do not generate heat processes and do not require hydraulic oil, with consequent contamination of the produced parts and disposal costs; they also use less energy and require considerably less maintenance, and furthermore they ensure an accurate bending process without unnecessary environmental impacts, at higher aesthetical quality. Prima Power has been a pioneer in this field for over 20 years: this makes the investment even*

*more reliable and beneficial for our company."*

As with any challenge, the support of a like-minded partner can make it easier to identify the right solution, implement the necessary steps and finally come through successfully.

#### AROUND THE CLOCK

During daytime production at Schulthess, the profiles automatically bent by the EBe4 and completed with the eP0520 are randomly checked and then released for final assembly.

The robot is increasingly used during the night shift, even when no human resources are present at the plant and the system is monitored with cameras. The robot, the EBe4 and the eP0520 independently produce the large series that is put together the next day by the assembly department. If, during this so-called "ghost shift", the system detects that a different gripper is needed for a certain work, the robot quickly and independently changes it, and continues to work autonomously.

"This plant is designed for eight to ten years of operations according to Industry 4.0 standards," says Winkler. "That's a lot of time at peak performance, and it is also a highly sustainable solution – which is crucial for us."

Finally, the only question that remains is about the error rate. "That's very easy to answer," Winkler is pleased to say: "The error rate is zero!" "What we appreciate most about Prima Power solution," he concludes, "is the outstanding performance offered by an efficient and flexible bending solution and the fact that all special customer requests are easily accommodated."



/// This plant is designed for eight to ten years of operations according to Industry 4.0 standards.



Prima Power bending solutions use highly efficient and sustainable servo-electric technology.

Robotic bending on the eP press brake.



# WHY A METAL FABRICATOR JUMPED INTO PANEL BENDING

## FLEXMET CHANGES ITS MANUFACTURING FOCUS WITH A NEW BENDING TOOL.

**A NEW PRODUCT FOCUS AND A DESIRE TO AUTOMATE BENDING ARE JUST TWO OF THE REASONS THAT FLEXMET INC. OPERATES A PANEL-BENDING MACHINE INSTEAD OF RELYING ON MORE PRESS BRAKES FOR ITS BENDING NEEDS.**

Picking up and starting over doesn't apply just to individuals. Sometimes companies need a reset too. Joe Bean had operated California Precision Products in San Diego since 1984, primarily serving the area's aerospace companies. The shop had CNC laser cutting, machining, punching, press brake bending, and tube bending capabilities in addition to powder coating. It ran 600 to 700 different part numbers per month for various customers, making the complex world of a job shop that much more complicated.

The shop's location didn't make things any easier. California is notorious for its high taxes and excessive state regulations, adding overhead costs that challenged the company's profitability. It also was not an ideal location from which to serve the Midwest, Southeast, and East Coast because of logistical costs and hurdles. So, in early 2021, Bean purchased a 65,000-sq-ft building in Franklin, Tennessee: the new home for FlexMet Inc., his precision sheet metal fabricating company.

*We learned about the panel bender as we looked to automate the forming cycle in our business. It was really that simple. It's really worked out well.*

Before the move, Bean had developed a product line of his own: cabinets designed to ensure the integrity of ballots placed in them. One product currently in development is a smart dropbox that can check the identification of the voter to match it to the ballot.

A key part of the company's ability to produce the cabinets is its BCe Smart panel-bending machine from Prima Power. It was one of the first machines that Bean got up and running in his new business.

With FlexMet, Bean said that he is hoping to focus more on his own products, even though he continues to do some job shop work with longtime customers. The next product launch will focus on outdoor kitchen cabinets and components. The panel bender will play a large role in the production of these parts as well. Back in California, Bean's company had eight press brakes and the panel bender. FlexMet has only four brakes and a panel bender. Here are some of the reasons why the new setup is successful.



The Prima Power BCe Smart panel-bending machine is integral to FlexMet's efforts in launching its own product lines.

#### RIGHT TOOL FOR THE RIGHT PARTS

On a panel bender, a manipulator holds the workpiece in place as a pair of bending blades contact the material to make upward and downward bends. The blades oscillate around a single bend point until the desired angle is achieved in the workpiece. Only certain types of parts are suitable for such a machine: panels, such as those that are part of a cabinet design, are a good fit for these devices. But a panel bender can't do it all, which is why FlexMet still has press brakes. "First of all, all the flanges have to finish up so the part can be removed by the manipulator. It'll bend in both directions, but the last bend has to be in the up direction," he said. "Also, if you have a part under 25 inches or so, it just doesn't make sense to put it on this machine."

#### FAST-TRACK TRAINING

An operator can learn to run the panel-bending machine after only a week of training. That allows the individual to become a valuable contributor on the shop floor in short time and frees up more experienced personnel for tasks that add value to the metal parts being processed.

*An operator can learn to run the panel-bending machine after only a week of training.*



Cabinets comprising panels and doors formed on FlexMet's panel-bending machine.

Almost all jobs for the panel bender are programmed offline using Master BendCam. The software has 3D simulation capabilities to help error proof the bending sequences. Because of this, the operator only needs to be able to pick the job, load the part up, and unload the part when it is done.

To run the machine, the operator places the sheet onto the brush table and then starts the job, which is the signal for the manipulator to engage the sheet and automatically center it for the start of the bending cycle. Unlike a press brake operator, who has to be exact with centering the part against a backgauge, the panel bender's manipulator does this for the operator.

The manipulator feeds the sheet incrementally as the bends are made on one side, and then spins the sheet around and feeds it in a similar fashion for further bending. For asymmetrical sheet edges or partial flanges on one side of the sheet, the panel bender has auxiliary blades that can move into place to accommodate the nonregular activity. Called the ASP option, the blades move back to their resting places outside of the bending area when these atypical forms are completed.

/// *The panel-bending machine operators don't need to know anything about tooling setup. It's done automatically.*



An automatic tool changer minimizes the time between jobs. In just a few seconds, the tools that hold the sheet in place can be removed or added quickly to create a tooling setup that matches the workpiece scheduled to be placed on the brush table. Bean estimated that only 15 to 20 seconds is needed for a tooling changeover, which is faster than tooling changeover on fully automated press brake cells. "This manufacturing process is one where we can run 10 different part numbers at a very low volume during the same day without suffering the effect of long setup times," Bean said.

### EASY ON THE OPERATORS

The panel bender handles all the part manipulation during the forming cycle. The operator only needs to load the part onto the brush table and position it where the machine's manipulator can grab it. The working table side sections of the BCe Smart can be lowered so that the operator can more easily access the sheets as loading or unloading is taking place.

/// *The panel bender is very specific in what it does, but it's really great at what it does. That's really the bottom line.*



### WELCOMING NEW BUSINESS

Bean is eager to watch FlexMet expand, building its own products and even taking on contract manufacturing assignments from other large manufacturing companies in the US Southeast. Tools like the panel-bending machine are going to make it possible to bid on that work, even as the company looks to ramp up hiring. FlexMet is forming a new future for itself, one panel at a time.



The full version of this article appeared in the April 2022 issue of *The Fabricator*.

*Joe Bean, FlexMet president, said the way his panel-bending machine can automate the forming cycle is particularly important to attract manufacturing talent in a competitive market.*



# 850 MILLION OPPORTUNITIES

## AUTOMATION FOR COMPETITIVE EDGE

**SPECIALIZING IN MANUFACTURING HVAC SYSTEM COMPONENTS AND ACCESSORIES, TECNO-VENTIL INTERNALLY MANAGES THE ENTIRE PRODUCTION CHAIN TO CREATE INNOVATIVE, INTELLIGENT AND STYLISH SOLUTIONS. THE SHEET METAL DEPARTMENT MAKES THE MOST OF A HIGH-PERFORMANCE, CONTINUOUSLY RUNNING PRIMA POWER SYSTEM CONSISTING OF A FIBER LASER CUTTING MACHINE, A STORAGE UNIT AND AN AUTOMATIC PARTS SORTING SYSTEM.**

Located in Spino d'Adda (Cremona, Italy), Tecno-ventil offers approximately 15,000 items that can be combined to create 850 million product configurations. "In 80% of the cases, our products are tailor-made," explains Andrea Fasoli, who owns the business with his brothers, Marco and Alessandro, and father, Mario. The company was founded in 1984 and established itself within just a few years thanks to its creativity, proactivity and flexibility. Today, Tecno-ventil produces 3,000 parts daily with 100 employees, in 20,000 sqm of production space and 3,000 sqm for offices, warehouse and logistics.

A crucial differentiating element for the company was the brave decision to produce almost its entire range internally, from design to testing the finished product. "By eliminating third-party manufacturing," adds Fasoli, "we ensure maximum flexibility, quality and quick turnaround times."

/// Our mission has always been product and process innovation, also by identifying equally innovative technologies that allow us to best meet our final objective: satisfying our clients with custom solutions.



Andrea Fasoli is Tecno-ventil owner together with his brothers, Marco and Alessandro, and father, Mario.

A decisive factor in optimizing product development was the sheet metal cutting department, which today includes a high-performance Prima Power system consisting of a 2D Laser Genius 1530 cutting machine with 4kW fiber laser source, a Compact Tower Twin storage system and an LST automatic parts sorting system.

#### MAXIMUM PRODUCTIVITY WITH NO INTERRUPTIONS

The system is not the first Tecno-ventil purchased from Prima Power. In fact, Fasoli recalls, *"We purchased a previous generation Prima laser cutting machine some 20 years ago. The machine stood out over time for its excellent reliability, and that convinced us to reconsider Prima Power for the new solution we were looking for."* Tecno-ventil's sheet metal cutting department also includes a Prima Power combined punch with right-angle shear Shear Genius SGe connected to a coil system.

/// Prima Power's system impressed us the most, in terms of both production capacity and high performance.



After reaching maximum production capacity, the business opted for a new investment that included not only the cutting and feeding of the material, but also sorting of the processed parts. The previous laser system allowed for continuous processing of cut parts with separation of the components done by one or more



operators, who were responsible for separation and palletizing the parts based on the various orders. All of this took a significant amount of time and resulted in inefficiencies that understandably also included possible errors on the part of the operator.

*"A deciding element in choosing the new system," Fasoli explains, "was the need to speed up the step after cutting in an ordered and definitive way, palletizing the parts so they are ready for the next part of the process, with sorting systems that would completely replace manual operations. Compared to those by other brands, Prima Power's LST sorting system of the cut parts was, in our opinion, the most functional."*

The types of products manufactured by Tecno-ventil require various material thicknesses (i.e. semi-finished products mainly in galvanized sheet metal of between 0.8 and 3mm). To maximize the efficiency and flexibility of the process, a twin tower automatic storage system was chosen, to ensure no interruptions during processing and to avoid manual operations.

#### THE SYSTEM AND ITS SOLUTIONS

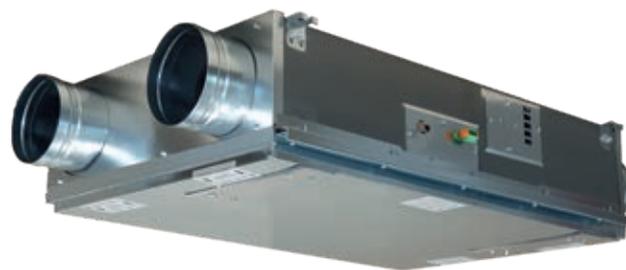
Tecno-ventil's Prima Power system includes a Laser Genius 1530, a high-end 2D cutting machine that combines flexibility, excellent dynamic performance and high levels of efficiency and precision, thanks to the innovative use of materials such as carbon fiber and synthetic granite. The cutting head and the optional suites (Smart Cut, Max Cut and Night Cut) optimize the laser cutting process for each application. The Compact Tower Twin, on the other hand, is the flexible system for 2D lasers that integrates loading and unloading of the processed and rough sheets onto two storage towers (with 26 or 36 pallets). Increasing the level of automation and making the system even more efficient is the LST system that automatically picks the cut parts and stacks them utilizing simple programming. Reliable, accurate and efficient, the system allows for three different procedures for picking parts: RALC (Robot Assisted Last Cut), where the robot holds onto the part before the laser finishes

*The automatic loading/unloading and storage system has helped us significantly increase production capacity while reducing production time and running costs since it allows for unmanned shifts.*



#### Above:

*The LST automatic parts sorting system automatically picks the cut parts and stacks them utilizing simple programming.*



#### Above:

*Tecno-ventil specializes in manufacturing components and accessories for HVAC systems.*

#### Bottom:

*Tecno-ventil produces over 50% of its components with the new laser cutting machine with sorting system by Prima Power.*





cutting the last profile; Pre-Sorting, where the robot reaches the operating area while cutting takes place and resumes as soon as the robot moves away; and Sorting, where the part is cut before being picked with the robot stationary outside the working area. To avoid unwanted movement during sorting, the system comes with additional clamps to hold the sheets.

The company produces over 50% of its components with the new laser cutting machine with sorting system by Prima Power – fully exploiting the system’s production potential.

#### THE ADDED VALUE OF PROCESS DIGITALIZATION

Data is objective and constantly verified thanks to Industry 4.0 technology with MES software and an IT infrastructure that connects all the machines, including Prima Power’s. “The move toward digitalization,” Fasoli concludes, “has significantly facilitated the management of our large number of items – which in the past were recorded manually on paper – by highly-qualified and well-trained staff. It’s not easy to make the transition to digital when more innovative technologies arrive. But once they adjust, operators never want to go back. Thanks to 4IR advances, we have become more efficient and rational, increasing monitoring and control and speeding up the entire process.”

The Laser Genius 1530 2D cutting machine with Compact Tower Twin loading/unloading and storage system and LST automatic sorting and stacking system.

/// The infrastructure we created allows us to trace and measure data for continuous work improvement, to create value that we pass on to the market, transforming it into customer satisfaction and greater competitive edge.



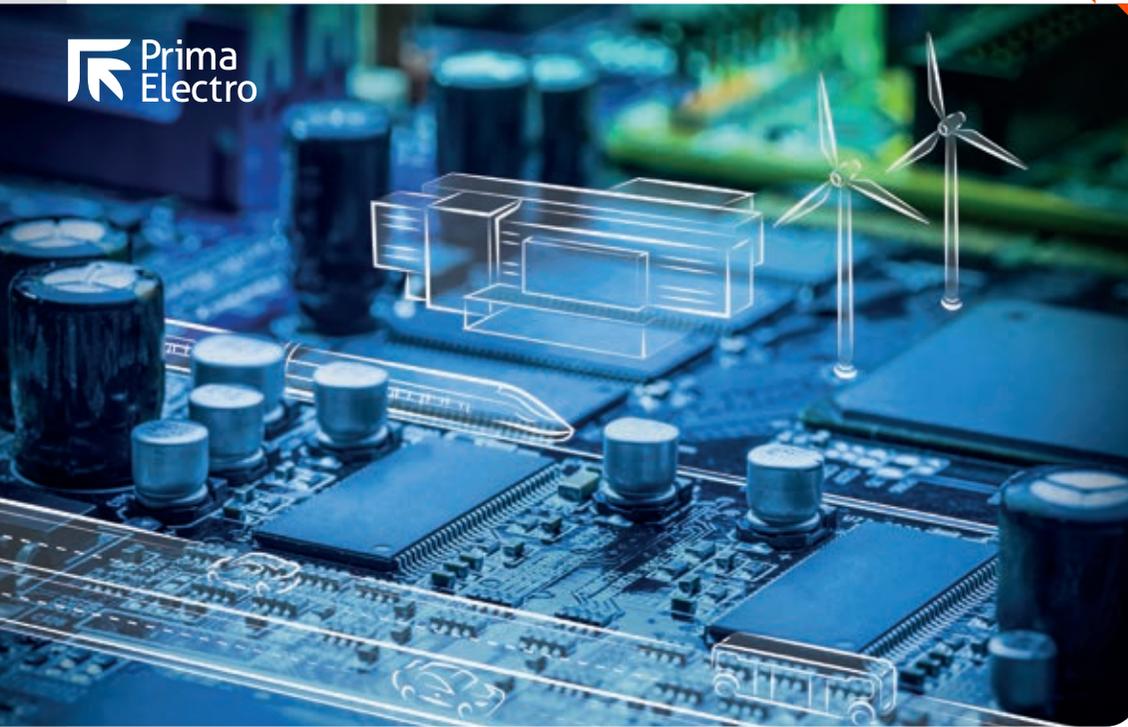
Watch the video interview of our customer Tecno-ventil. The full version of this article appeared in the September 2021 issue of Lamiera.



# OFF-HIGHWAY AND GREEN

**ELECTRIFICATION DOES NOT STOP AT PASSENGER VEHICLES**

Prima  
Electro



**COMPANIES ARE REQUIRED TO FACE EVER HIGHER TECHNOLOGICAL AND INNOVATION CHALLENGES, AS THE MARKET AND EVERY INDUSTRY COLLABORATE TO REACH THE EU'S GOAL OF REDUCING CO<sub>2</sub> EMISSIONS BY 55% BY 2030.**

With over 10 million electric vehicles on the road, 2020 saw rapid growth in the global electrification market. In Europe alone, compared to 2019 data, the increase in BEVs (Battery Electric Vehicles) and PHEVs (Plug-in Hybrid Electric Vehicles) was 137% according to EV-volumes.com. Earthmoving machines are no exception to the general trend towards electrification: all major manufacturers are investing in alternative propulsion solutions, in response to rising demands for compliance with regulations on eco-mobility, emissions reduction and efficiency improvements. Electrification, therefore, presents itself as one of the last technological frontiers of off-highway vehicles, also thanks to the countless advantages this solution can offer.

From construction, agriculture, mining and many other industries, off-highway vehicles are at the very center of an electric revolution that is gaining ground. Compared to traditional models, electric ones represent a strategic choice that guarantees not only an increase in efficiency, but also a reduction in consumption, emissions and noise, optimizing operating costs and improving the quality of work, while offering a product that is as high-performance and green as possible.

In this scenario, having the support of a qualified technological partner is key, to bring to the table extensive know-how in developing and producing the technologies necessary to face this transition phase. To make electric vehicles more attractive,

it is necessary to find solutions that can increase their efficiency and duration, such as the inverters developed by Prima Electro, with an optimized design capable of reducing energy consumption and, consequently, increase range. All the Business Units of the Prima Industrie Group collaborate with vehicle manufacturers and their suppliers to provide solutions that increase vehicles' range, such as laser technologies to process innovative materials for the manufacturing of lighter and stronger bodies and battery housings. Electrification is making great strides ahead with the aim of building a more efficient, quieter and greener future. Our Group is proud to support industries in this momentous evolution.

# CODE GREEN

## SOFTWARE MAKES PRODUCTION MORE ECO-FRIENDLY



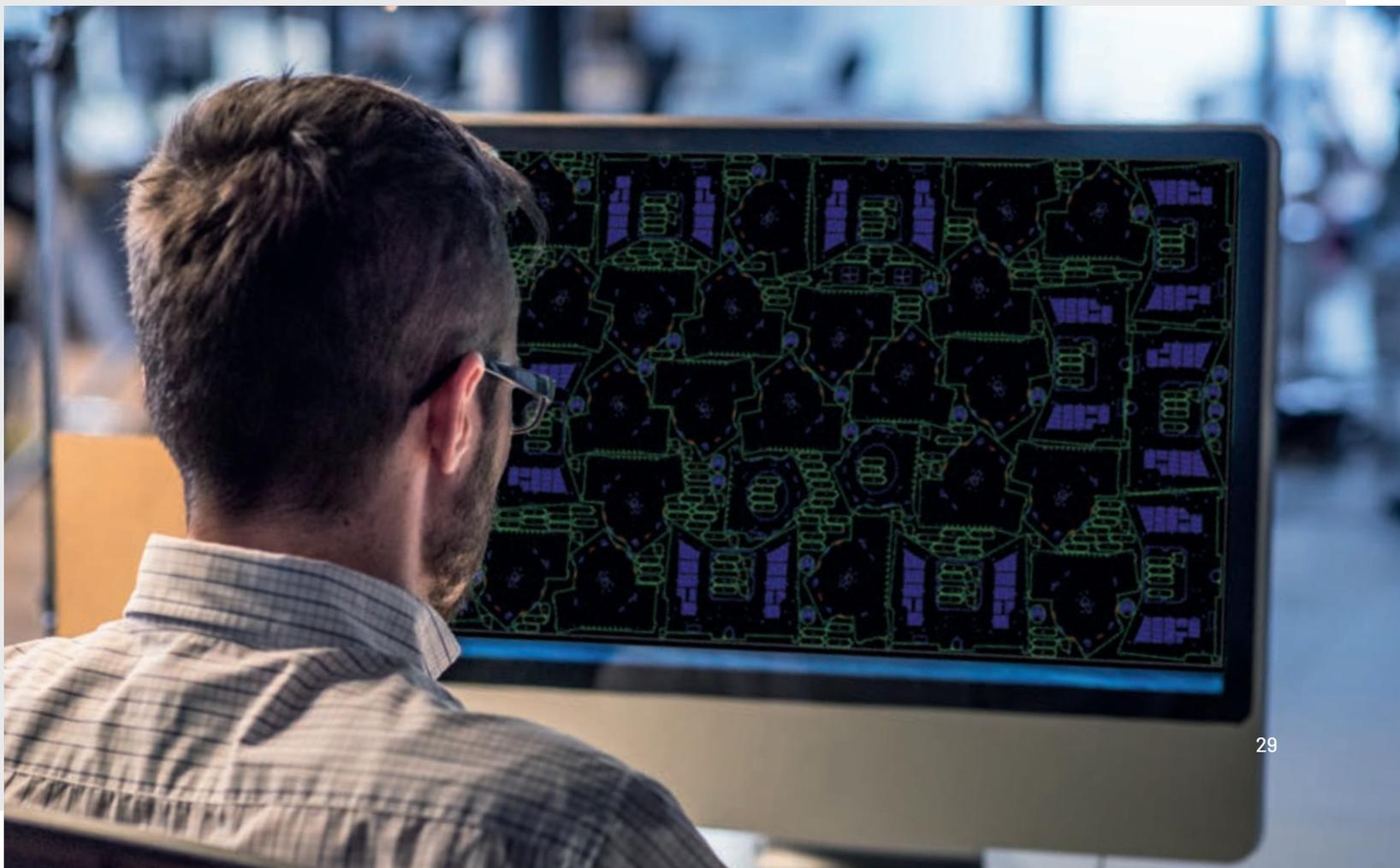
by Ivana Montelli

Prima Power SW  
Product Manager

**SOFTWARE SOLUTIONS CAN MAKE AN IMPORTANT CONTRIBUTION TO MORE SUSTAINABLE PRODUCTION BECAUSE THEY CAN ENABLE MANUFACTURING PROCESSES WITH REDUCED IMPACT, INCREASE ENVIRONMENTAL EFFICIENCY, AND CREATE NEW VALUE FOR THE CUSTOMER THROUGH DIGITAL TRANSFORMATION.**

Here are some practical examples of what software can do to make production more environmentally conscious:

- Fully exploit materials such as sheet metal, while reducing energy consumption and production times, with highly-efficient nesting, automatic material monitoring and the use of simulators and digital twins to carry out a range of operations such as tests, capacity studies and production plans.
- Save energy and maximize machine efficiency by optimizing processes and work sequences, with continuous software package updates that allow for increasingly innovative functionalities.
- Reduce downtime and maintenance costs by maximizing OEE (Overall Equipment Effectiveness) through production and performance monitoring and control systems based on IoT and artificial intelligence and with advanced maintenance, service and training systems that leverage the potential of augmented reality.
- Maximize safety, usability, ergonomics and production efficiency thanks to control systems, vision systems to support daily operations, and user-friendly interfaces and touchscreens, designed to increase the wellbeing of all the people who interface with the machines at all levels.



# THE IMPORTANCE OF UPGRADES



by Massimiliano Tarable

Prima Power  
After Sales Trade  
& Marketing Manager

Machines, laser sources, automations and software are constantly updated to introduce new features, improve efficiency and performance and meet emerging market needs. Product upgrades play a crucial role in keeping up with technological evolutions and extending the life of machines, delaying the investment in new equipment, thus embracing the paradigm of the circular economy, which aims to extend the life cycle of the product instead of replacing it with new ones. Furthermore, keeping your equipment at the highest level of efficiency means saving on consumption and improving quality.

Product enhancements allow you to move your business forward and keep up with new market opportunities, increasing the productivity, flexibility and intelligence of your systems. The modularity of our automation and storage solutions allows you to keep your equipment always in step with the growth and evolution of your business.

Prima Power upgrades include:

- SW upgrade
- HW upgrade
- laser power upgrade
- performance upgrade (head replacement, activation of special functions, etc.)
- automation and Night Train upgrade.



## Main benefits of upgrades:



Increased efficiency



Enhanced performance



Improved reliability and security



Higher smartness



Longer machine life

To discover our upgrade current promotions, contact your local Prima Power service center.

# THE SYSTEM

YOUR JOURNEY  
TOWARD THE FUTURE  
OF MANUFACTURING  
STARTS HERE.



**Prima Power System technologies** optimize the processing of sheet metal components into a fully integrated and interconnected solution. Flexibility, modularity, and the automation of both material and information flow are the basis of our solutions, designed to combine all stages into a single process and maximise productivity. Discover our range and start building the future of automated manufacturing with us. **Together we grow.**



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