

CUSTOMER PROFILES

NEW TECHNOLOGY

PRODUCTIVITY

FLEXIBILITY

POWER LINE

2023
ISSUE 01

VOLUME
#16

SHEET METAL BENDING WHAT'S NEXT?

CHANGING NEEDS, NEW TECHNOLOGIES
AND EMERGING TRENDS



POWER LINE is a Prima Industrie publication.

A man with glasses, wearing a dark suit jacket over a white shirt, stands with his arms crossed in front of a Prima Power exhibition stand. The stand is primarily blue and white, with large 3D letters spelling 'Prima Power' at the top. To the right, a smaller logo and the text 'Express Bender EBe2720' are visible. The background shows more of the exhibition stand structure.

Prima Power



Prima Power

Express Bender
EBe2720

PROGRESS IN MANUFACTURING AUTOMATION TOGETHER, WITH GREATER ENERGY

It is with immense pride that since December 2022 I have been leading the Prima Industrie Group: a great team that has been operating in the sheet metal working sector since 1977 with an innovative spirit and tireless passion.

The name **PRIMA, PRogress In Manufacturing Automation**, represents our DNA from the start and our vocation for the future: solutions to increase the added value of our customers' manufacturing systems, based on a strong innovative capacity and deep know-how in sheet metal working technologies.

To continue this journey of constant progress, in the coming years we will mainly work on three strategic levers:

- **Satisfaction of customer needs:** this will be the starting point and the center of every activity for every person on our team;
- **Execution speed:** we will increase our speed both in response times to the customer at every moment of contact, and in the performance of our solutions;
- **No compromise between productivity and flexibility:** our energies and our efforts in research and development will be focused on production systems with ever-faster cycle times, without sacrificing production and application versatility.

We will continue to work with utmost commitment and enthusiasm towards these objectives, to give more strength to your business and to support you in today's and tomorrow's challenges. Always by your side, but with even greater energy. The focus of this issue of our Power Line magazine is on **bending technology**, in which Prima Power can boast **continuous and concrete innovation, starting from your challenges**. A journey made together with you and for which we thank you: the desire to satisfy your needs is what will push us to evolve further.

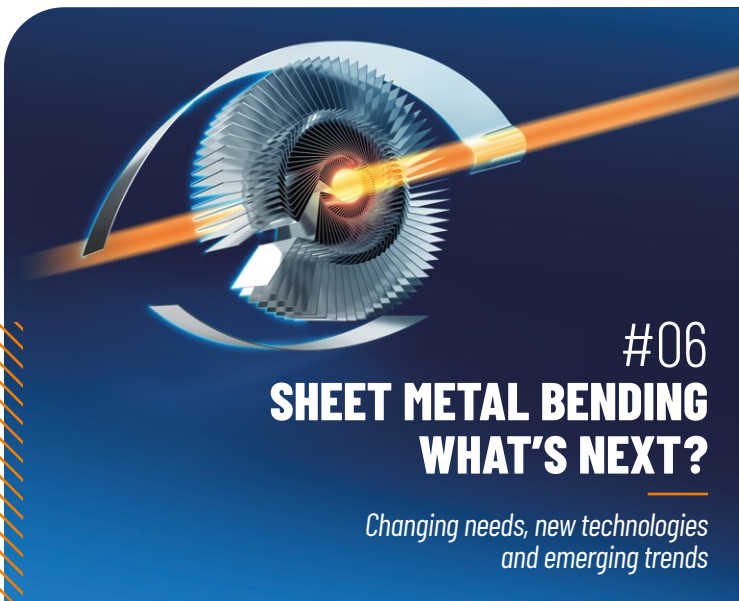
Giovanni Negri
CEO Prima Industrie

/// Meeting your needs
with greater speed
and determination.



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POWER LINE

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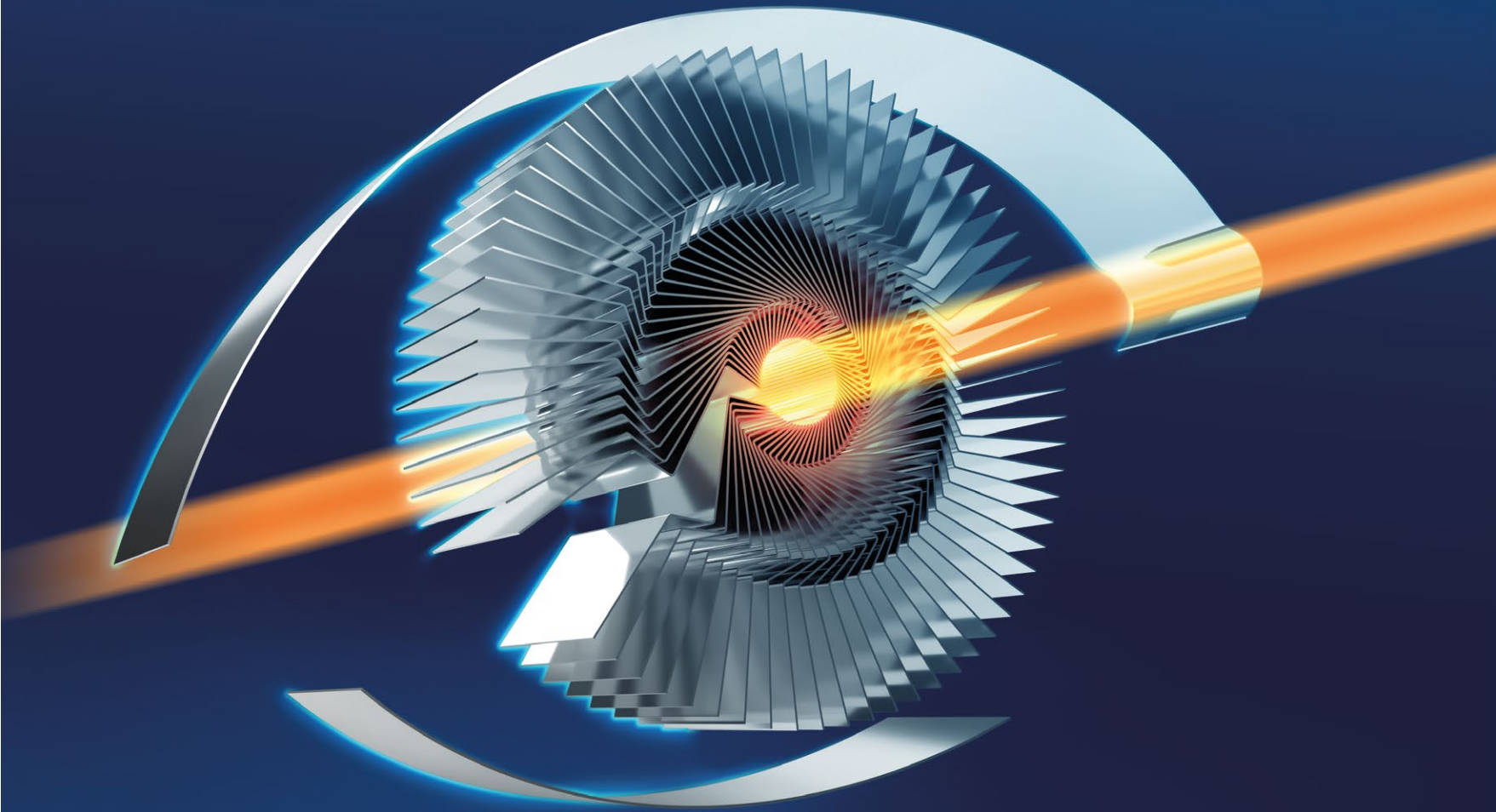
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SHEET METAL BENDING WHAT'S NEXT?



CHANGING NEEDS, NEW TECHNOLOGIES
AND EMERGING TRENDS

In recent years, the **manufacturing industry has undergone significant transformations**, characterized by increasing customization and shorter product lifespans. This shift has led to a **reduction in production quantities and delivery times, and a rise in quality standards** that must be met from the outset. Additionally, the **shortage of skilled labor** has become a global phenomenon, necessitating a revision of production methods. Companies are also under pressure to **reduce material and energy consumption, minimize waste, and provide additional services** to remain competitive, as production has become more complex and integrated. In the sheet metal processing sector in particular, there is a growing demand for finished products that involve cutting, bending, welding, painting, and other finishes, along with a need for product engineering.

These changes have impacted the sheet metal bending industry as well, along with **new customer needs and technologies**. What challenges lie ahead, and how can players in this sector prepare for them?

CHANGING CUSTOMER NEEDS

Some of the main needs expressed by customers today are centered around quality, flexibility and production speed.

Geometric precision and aesthetic quality are key to standing out in today's competitive scenario, allowing a higher complexity of final products and boosting productivity with the reduction of production steps.

Customization is another major need of customers in this industry. Companies with bending machines that can produce components with different shapes, sizes, and features, such as holes and cut-outs, with no need for redesign and set-up time can meet a wider range of customer needs. **Smaller batches** are becoming more prevalent, and manufacturers need to be able to switch from big to small runs with maximum **flexibility** without sacrificing productivity.

Finally, **faster delivery time** leveraging on high **production speed** is essential to succeed in today's market. As a result, companies that can deliver their products faster have a strong competitive advantage in the industry.

RISING CHALLENGES

As it continues to expand, the sheet metal bending industry is facing various challenges, such as shortage of skilled labor, integration and automation of production processes, and the pursuit of sustainable solutions.

The **shortage of skilled labor** is a big challenge facing the market. Cutting-edge automatized and digitized solutions are needed to relieve operators from low-value added operations, speed up and simplify activities requiring more specialization and reduce the operator's learning curve.

In order to improve efficiency and reduce lead times, manufacturers are progressively **integrating bending machines with other production processes**, such as punching, shearing,

A CONVERSATION WITH OUR EXPERTS ROBERTO DE ROSSI, PRIMA POWER ROBOTIC CELLS PRODUCT MANAGER, AND LUCA SPADINA, BENDING PRODUCT MANAGER ON EVOLVING NEEDS AND EMERGING PATTERNS IN THE SHEET METAL BENDING INDUSTRY.

WHY IS SERVO-ELECTRIC TECHNOLOGY BETTER?



The benefits of fully servo-electric technology applied to sheet metal working machines are many and go beyond the more obvious energy savings. This technology leads to an overall improvement in your production: more pieces, at lower costs, with higher quality and flexibility.

- Lower energy consumption
- High precision bending
- Faster bending operations
- Flexibility, versatility and adaptability
- Less maintenance required
- Reduced environmental contamination
- Greater material recovery and minimal pollution

Luca Spadina
Prima Power Bending Product Manager

laser cutting, welding, etc. In this regard, it is crucial for companies to be able to rely on a single partner who can offer and integrate different types of technologies. Moreover, the use of bending cells that incorporate press brakes and panel benders to work in symbiosis, as if they were a single machine, allows the use of a diverse range of applications.

Like many other industries, the sheet metal bending sector is increasingly **prioritizing sustainability**. Manufacturers need energy-efficient bending machines in order to improve economic efficiency and reduce their environmental footprint.

WHAT'S NEXT?

The sheet metal bending sector is expected to continue growing, also driven by the **ongoing global trends**. Urbanization is driving growth in the building and construction domains; global warming is increasing the demand for heating, ventilation, and air conditioning (HVAC) systems while the need for energy self-sufficiency is fueling the market for solar panels and batteries. Moreover, the growing population is affecting agricultural production and, consequently, the market for yellow goods. Lastly, transportation services are evolving to address mobility challenges that cannot be tackled by private vehicles. In order to maintain their competitive edge, manufacturers must adapt to evolving market needs, while also embracing automation, robotics, and the latest digital technologies. **Which innovations are crucial today for manufacturers to stay ahead of the curve?**

SERVO-ELECTRIC TECHNOLOGY

Servo-electric technology can help companies in the sheet metal bending industry be more competitive in several ways. In fact, servo-electric machines:

- **Consume less energy** compared to hydraulic or mechanical machines because they only use electricity when needed. This results in **lower energy costs and a smaller carbon footprint**
- **Offer high precision bending** with accurate control of the bending angle and speed, which ensures **reliability, consistent quality and reduces material waste and scrap**
- **Perform bending operations faster** than hydraulic or mechanical machines due to their high acceleration and deceleration rates
- **Are highly flexible** and can be programmed to handle different types of sheet metal and bending angles, making them **more versatile and adaptable** to changing production requirements
- **Require less maintenance** than hydraulic or mechanical machines because they have fewer moving parts and do not require hydraulic fluid
- **Allow the elimination of contaminants** such as hydraulic oils which are used for oil-dynamic systems
- **Ensure greater recovery and minimal pollution**: this is especially important in the context of a circular economy, where sustainability also extends to the disposal and recovery of materials.

DIGITIZATION, AUTOMATION, AND ROBOTIZATION

Manufacturers can achieve higher levels of efficiency, accuracy, and flexibility by integrating digital technologies into their production process. Digitization also enables greater connectivity and data sharing throughout production workflow.

Artificial intelligence (AI) and machine learning can help optimize bending processes by analyzing data and identifying patterns that humans might not notice, increasing efficiency and product quality while reducing waste. **IoT technologies** grant real-time monitoring of processes, allowing for rapid adjustments and improvements. They can also enable advanced maintenance, reducing downtime and maintenance costs. **Dedicated software and algorithms** for

managing production parameters and bending corrections allow them to produce the perfect part right from the first time.

Automation, both in application processes and in manufacturing processes, is already helping improve productivity and reduce manual operations in the sheet metal bending industry, and this trend is expected to continue. **Robotic systems automate many of the processes involved**, from material handling to quality control, allowing unmanned operations 24/7, **reducing lead times and increasing output capacity.**

Investing in innovation with a forward-thinking approach ensures a competitive advantage for long-term success.

HOW ROBOTICS AND AI ARE IMPACTING BENDING TECHNOLOGY?

The sheet metal bending industry is experiencing a significant increase in the use of robotics, both among press brakes and panel benders. In what way is robotics evolving over time?

During the 1980s, the primary objective of robotics was to produce large volume components by replacing humans in tasks that involved high repetition of operations, as well as heavy, stressful or devaluing work. Today's manufacturing needs have changed. The demand for small batches of products with short lifetimes and high variability requires robotics to evolve. As a result, modern types of robotics must prioritize programmability (preferably offline), adaptability to different productions, and flexibility.

Despite these advancements, robots still require field-testing after programming before they can move to production. One of the key upcoming challenges in robotics will be to eliminate this testing phase and enable direct production.

How can the adoption of AI technologies create opportunities for the sheet metal bending industry?

Achieving the desired shape and fit when bending sheet metal requires careful consideration of multiple factors, including the material type, thickness, and component shape. Finding the optimum bending angle to achieve these goals is usually a challenging and time-consuming task.

For example, based on the initial data and all subsequently acquired information, an artificial intelligence system could generate the ideal bending angle and tool selection that will ensure accurate and efficient bending while minimizing waste from the very first part produced.

In the near future we will be able to achieve the optimal bending angle at the first attempt, without failing, and angle control will no longer be necessary to obtain the angle required but to verify that the bending has been executed correctly. AI technologies can significantly help manufacturers to reduce costs while increasing production efficiency, thus benefiting the entire industry.



Roberto De Rossi
Prima Power
Robotic Cells Product Manager

CELEBRATING 35 YEARS OF BENDING SUCCESS

THE MILESTONES OF PRIMA POWER'S LONG-LASTING LEGACY IN SHEET METAL BENDING TECHNOLOGY

The history of Prima Power bending technology begins 35 years ago, with the first press brake introduced in 1988 followed by the first panel bender in 1990.

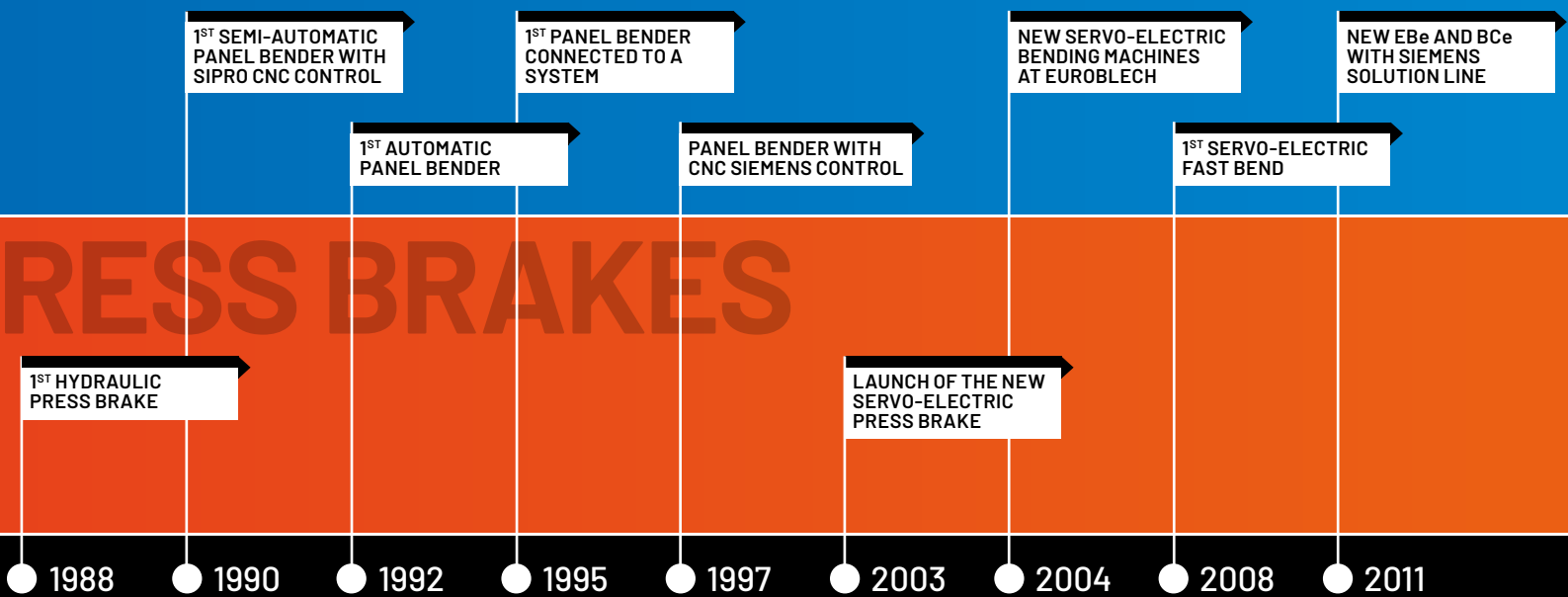
Since then, the company has stood for innovation in sheet metal bending with a long line of products and technological advances,

especially in servo-electric bending technology, which it pioneered with the first solutions dating back two decades.

Today, Prima Power is a leading supplier of a wide range of bending solutions with different automation levels and a high degree of efficiency, flexibility and integrability.

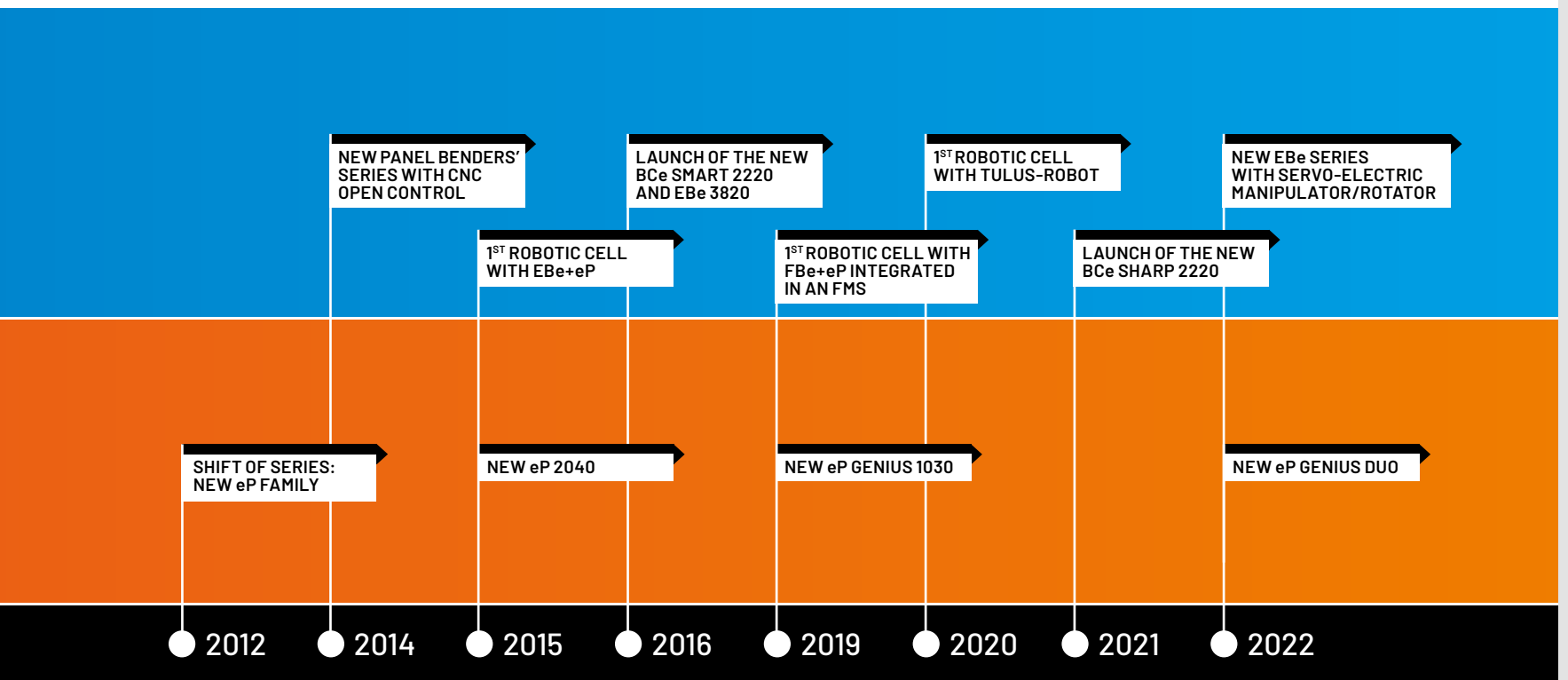
PANEL BENDERS

PRESS BRAKES





The Cologne Veneta plant, where our bending products are manufactured, celebrating the 1000th customer of our panel bending machine: an opportunity to thank our team and all the customers who over time have believed in our technology and in our partnership to achieve their production targets.



THE POWER OF FLEXIBLE AUTOMATED MANUFACTURING

AS INDUSTRIES CONTINUE TO EVOLVE, ONE OF THE BIGGEST CHALLENGES FOR SHEET METAL MANUFACTURERS LIES IN FINDING FLEXIBLE AUTOMATED SOLUTIONS FOR NEW AND CONSTANTLY CHANGING MARKET REQUIREMENTS.

Automatic solutions with the **best combination of flexibility and efficiency** are needed to be able to produce both big volumes and small batches with the same system, always in an economical way and with the highest efficiency and quality standards.

Moreover, today **modular and scalable solutions are needed, to allow an incremental approach to manufacturing automation.**

This gives companies the ability to scale up in a gradual way over time, as soon as demands increase, starting with the system suitable for their current needs and replacing or adding modules to follow their growth and their vision.

The **completeness and easy integrability of its product range and over 30 years of experience in Flexible Manufacturing Systems (FMS)** allow Prima Power to always offer the best answer to any production volume and mix and to any growth project, from individual machines up to factory-wide solutions.

FLEXIBLE AUTOMATED MANUFACTURING

- FROM SMALL TO BIG BATCHES
- LOWER COST PER PART
- HIGHER PROCESS ACCURACY AND PART QUALITY
- DIFFERENT PROCESSES INTEGRATED IN ONE SYSTEM
- POSSIBILITY TO SCALE UP AUTOMATION WHEN NEEDED



A flexible factory-wide automatic solution including single blocks which can be added in different steps.

Some examples of our flexibly integrated solutions:

- Depending on the application, panel benders can be added to punching and cutting machines to create fully **automatic manufacturing lines such as PSBB or LPBB**, capable of producing ready bent components from raw metal sheets.
- Panel benders can be equipped with systems to automate material handling. The Express Bender EBe panel bender, for instance, can be equipped with the **USS option for the automatic unloading and stacking of bent components**, allowing an automatic system, which becomes fully unmanned when inserted in a manufacturing line.
- Panel benders and press brakes can be integrated into **integrated robotized cells**, giving customers the possibility to interchange One Piece Flow and Batch Production manufacturing methods depending on the case. Robotized cells can also include panel benders and press brakes together, thus allowing the greatest flexibility in terms of material thickness and part geometry.



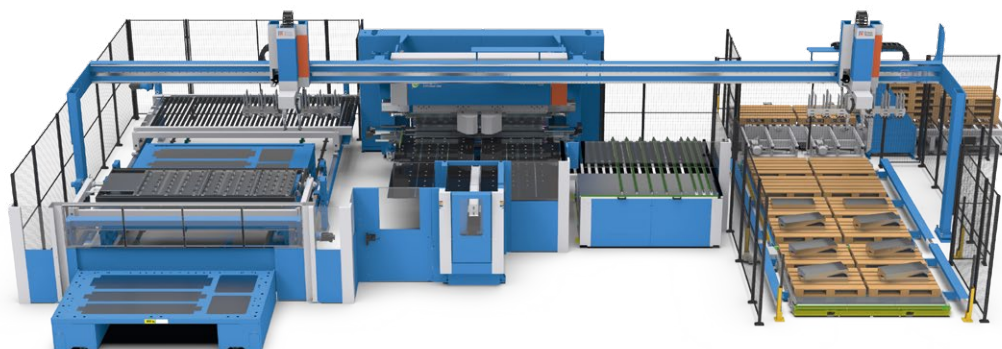
- **Automatic tool change storages** can be integrated with press brakes, eliminating manual machine setup. Possibility of combining two press brakes (e.g. one electric and one hydraulic, even of different sizes) with the same tool storage to increase the field of application of the system.
- All manufacturing processes can be integrated into a single, fully unmanned factory-wide system with a modular and scalable **automatic storage system Night Train FMS**, capable of reducing the different fabrication processes into a single process with maximum production time.

What makes all these combinations and integrations possible is the **Prima Power proprietary software ecosystem**. Common to the entire production process, it allows the interconnection of the machine at all levels, the increase in efficiency and productivity, the reduction of times thanks to precise production planning, and supplying the customer with a huge amount of data for the complete control and traceability of the full manufacturing process.

An integrated robotized bending cell composed of an EBe panel bender, an eP press brake, an anthropomorphic robot on 7th axis, integrated in an FMS.

Today, modular and scalable solutions are needed, to allow an incremental approach to manufacturing automation.

Automatic tool change storage integrated with a servo-electric eP press brake and a hydraulic press brake.



The Unloading and Stacking System USS is the only integrated solution available on the market for automatic stacking of bent parts.

LEADING THE WAY IN ORGANIC FARMING

INNOVATIVE TECHNOLOGIES TO OVERCOME THE COMPLEXITIES OF CUSTOMIZATION

Extract from an article published on *Deformazione* magazine



SKA SRL MANUFACTURES POULTRY SYSTEMS FOR ORGANIC FREE-RANGE FARMING. THE NEED FOR HIGH-LEVEL CUSTOMISATION HAS LED THE COMPANY TO ADOPT AUTOMATION TO IMPROVE PRODUCTIVITY AND FLEXIBILITY IN PRODUCTION PROCESSES.

How to adequately respond to the needs of product customisation, while offering superior quality?

Dino Pozzato, Chairman of the SKA Group has no doubts: the answer lies in automation.

SKA srl has been manufacturing cutting-edge equipment for the organic poultry breeding sector since 1954. The admirable and philanthropic choice to radically differentiate from the concept of intensive farming led the company based in Sandrigo (Vicenza, Italy) to be **strongly driven by the automation of production processes**, also guaranteed by virtue of the technological partner they chose more than 20 years ago: Prima Power.

A Night Train automatic storage unit connected to a combined Shear Genius and robotic bending cell, consisting of a Fast Bend FBe panel bender and an eP 1030 press brake, are the cornerstones of varied production activities which demand high performance and productivity, as well as flexibility and versatility to efficiently manage any product changes.

Dino Pozzato
Chairman of the SKA Group



The Night Train automatic storage is connected to the combined Shear Genius and the robotic bending cell, consisting of a Fast Bend panel bender and an eP 1030 press brake.

Our production needs to be high performing while also being flexible.

COMPANY HIGHLIGHTS

SKA srl

LOCATION: Sandrigo (Vicenza), Italy

FOUNDED: 1954

FIELD OF BUSINESS: Poultry systems for organic farming

PRIMA POWER MACHINERY

- Night Train FMS
- Shear Genius SGe6
- FBe Fast Bend
- eP 1030 press brake

THE COMPLEXITIES OF CUSTOMIZATION IN ORGANIC POULTRY FARMING

By exclusively dealing with organic farming plants, SKA has become an authoritative reference for leading Italian and international groups, while also providing direct support to smaller farms. "Since our foundation, we have managed to distinguish ourselves and build a highly technological business structure over time, while always standing alongside the breeders," says Dino Pozzato. "Our feeding, watering, lighting and air conditioning systems are designed to satisfy the well-being of animals and meet the regulations in force."

The challenges deriving from the high level of product customisation and the decision to use only organic poultry farming are far from being simple. "We offer a complete turnkey service, with plants specifically designed for this type of farming, resulting in reduced numbers compared to intensive farming", explains Diego Pozzato, plant manager of SKA. "This prizes quality over quantity, and favours animal welfare over pure economic interests. Consequently, devices and equipment to be produced are different, since we produce large quantities in series but with smaller batches, while maximum flexibility is required to meet specific breeders' requests. Our production needs to be high performing and productive while also being flexible and versatile in order to efficiently manage any product changes".

**A LONGSTANDING PARTNERSHIP
FOCUSED ON EFFICIENCY AND INNOVATION**

SKA has been a loyal customer of Prima Power since 1998, and the partnership has evolved over the years. "We were pioneers in the use of their F5 punching machine," says Diego Pozzato, "which we replaced in 2011 with the current Shear Genius SGe6, followed by the Night Train automatic storage unit in 2017 and the integrated robotic bending system in 2020. **The new bending system combines the advantages of both an efficient servo-electric panel bender and a modern electric bending machine, allowing us to carry out all the processes quickly and efficiently.**"

"Previously," continues Diego Pozzato, "we could only bend approximately 60% of our production, which caused a bottleneck. However, **by effectively combining the two bending technologies, we can now achieve unprecedented operations, as this covers 100% of our bending needs.** It's an incredibly valid and interesting solution in which two different bending systems work together to produce parts; the panel bender handles whatever the bending machine cannot and vice versa.

/// The new bending system combines the advantages of both an efficient servo-electric panel bender and a modern electric bending machine, allowing us to carry out all the processes quickly and efficiently.



The robot moves on the front of the machines along its 19 m track, which allows it to cover both the bending machine and the panel bender as well as the three unloading bays.

The great advantage is that the whole system is managed offline; this means that the technical office can schedule production in masked time while the cell is manufacturing. As a result, downtime is kept to a minimum and the process efficiency is maximized.

The 19-meter track of the robot allows it to move along the front of the machines, covering both the bending machine and the panel bender. It can also easily reach any of the three unloading bays and deposit pieces on the multiple palletizing areas designated for this purpose.

The cell consists of two machines that can work in series or parallel, with the anthropomorphic robot serving both machines simultaneously for partial processing on the panel bender and finishing on the bending machine. Alternatively, the robot can serve one machine while the other is operated manually. This solution offers great flexibility. The cell is also designed to have maximum flexibility in managing workflows, with a storage unit providing the feed instead of a direct feed from the Shear Genius.



Diego Pozzato
Plant manager of SKA

By effectively combining the two bending technologies, we can now cover 100% of our bending needs.

**PRIMA POWER'S INTEGRATED ROBOTIC BENDING SYSTEM:
A KEY COMPONENT IN SKA'S MANUFACTURING SUCCESS**

"The effectiveness of the Prima Power integrated robotic bending system adopted by SKA derives from the simple and fast offline programmability of the machines and robot included in the cell," says Roberto De Rossi, Prima Power Robotic Cells Product Manager. "This solution achieves maximum benefits from the investment, since efficiency is guaranteed for the production of both small and larger batches. **To ensure greater flexibility, the machines can be used in both traditional and standalone modes, allowing the robot to create repeatable parts or perform manual machining as needed,**" explains De Rossi. The robot's track can be closed by the robot itself when necessary, providing the operator with direct access to one of the machines for small quantity tasks where the robot would not be beneficial.

"The panel bender is the most convenient of the two machines, because it guarantees unbeatable bending speeds; however,

certain profiles, such as "C" shapes with particularly high edges, mean the bending machine is the only possible option", explains Diego Pozzato. "It therefore depends on the shape to be made and its dimensions. The Fast Bend panel bender is still the weapon of choice for productivity and flexibility."

The bending machine and panel bender are both operated with servo-electric technology, providing two key benefits: **reduced energy consumption and high precision and repeatability during processing.**



Scan the QR code to watch the system installed at SKA at work.



SETTING THE STANDARD FOR SMART FACTORIES

**THE GLOBAL AIOT INNOVATOR INVESTS
IN STATE-OF-THE-ART EQUIPMENT
TO PRODUCE HIGH VALUE-ADDED PRODUCTS**

**SUNSEA AIOT TECHNOLOGY'S
SUBSIDIARY IN ZHUHAI PIONEERS
SMART FACTORY INNOVATION
WITH CUTTING-EDGE MACHINERY.
THE WORLD-CLASS FACTORY
SERVES BOTH DOMESTIC
AND INTERNATIONAL MARKETS.**

"SUNSEA AIOT has made significant investments in the Zhuhai smart factory with the aim of setting a new standard for smart factories in China", states Luo Yuanping, production director of the Zhuhai plant.

In 2020, **SUNSEA AIOT Technology Co.**, a high-tech enterprise listed on the Shenzhen Stock Exchange and the world's first AIoT (Artificial Intelligence of Things) innovator, **decided to invest hundreds of millions of RMB in a world-class smart factory** for the production of ICT infrastructure equipment and other smart device products in its Zhuhai subsidiary.



*Luo Yuanping,
production director of the
SUNSEA AIOT Zhuhai plant*



Further to the PSBB line, in SUNSEA AIoT plant 3 Shear Genius SG 1530 machines and 5 eP 1030 press brakes are installed.

PURSuing GROWTH THROUGH STATE-OF-THE-ART EQUIPMENT

"All workshops are outfitted with state-of-the-art equipment capable of producing high value-added products, catering to the needs of both large-scale and small-scale production runs," says Yuanping. "The Zhuhai factory focuses on international business related to carrier base station microstation power supply and optical transmission/access network supporting products. It provides outdoor power supply cabinets for Ericsson in Sweden and microstation power supply/battery for Japanese customers' base stations. The international business is growing very fast, with extremely strict requirements on delivery time and quality."

"Domestic business products include ODN outdoor cabinet products, antenna feeder accessories, tower room, as well as data centers, power distribution, intelligent cabinets and power supply batteries, and other related products," explains Yuanping. "VIP Customers include Alibaba, JD, Inspur and Wangjie Big Bata, among others. The segment for domestic optical wiring transmission, wireless sites, data centers, and network energy is also experiencing rapid growth. This business sector is characterized by intense competition due to the diverse range of products and services offered."

Following over a year of construction, the new factory covering 53,000 square meters finished building the sheet metal workshop, welding and grinding workshop, warehouse, assembly workshop, power supply battery workshop, and painting workshop. **The factory was ready for mass production at the beginning of 2022.**

COMPANY HIGHLIGHTS

SUNSEA AIoT Technology Co. Ltd

LOCATION: Shenzhen, China

FOUNDED: 1994

FIELD OF BUSINESS: High-tech IC infrastructure equipment and smart devices

PRIMA POWER MACHINERY

- Shear Genius SG 1530 + PSR 1530 + LD 1530
- Express Bender EBe 2720
- Combo Tower 1530
- Shear Genius SG 1530+ LD 1530 (3 sets)
- eP 1030 (5 sets)

CUSTOMER STORY

HIGHER EFFICIENCY WITH PRIMA POWER'S CUTTING-EDGE EQUIPMENT

"The smart factory's sheet metal production line incorporates several automated and intelligent functions, including automatic feeding, material pickup, punching and shearing, transfer, flap operation, caching, bending, inspection, validation, stacking, scrap collection, and pre-alarm systems," says Yuanping. "We have been Prima Power's loyal customer for over two decades, having purchased three generations of their equipment that have consistently delivered stable performance across our factories in various cities. Therefore, when designing the Zhuhai smart factory, we opted for Prima Power's cutting-edge sheet metal equipment, including their latest punching and shearing machines which are integrated with automatic loading equipment (LD) and unmanned production systems, as well as the high-speed transfer, punching, and stacking to different locations enabled by the automatic stacking system (STS)."

"The EBe series of servo-electric driven bending centers offers a high level of automation and customization, while the Combo Tower provides flexible material handling capabilities and

serves as an intermediate storage unit for prepared components. Throughout the construction and operation of our new factory, **the sales and after-sales service personnel at Prima Power impressed us with their professional pre-sales explanations, precise installation, attentive coaching, and thorough maintenance,**" notes Yuanping. "Additionally, our employees were already familiar with the Prima Power production line, allowing us to quickly achieve our expected production goals with the sheet metal production line running at high speed."

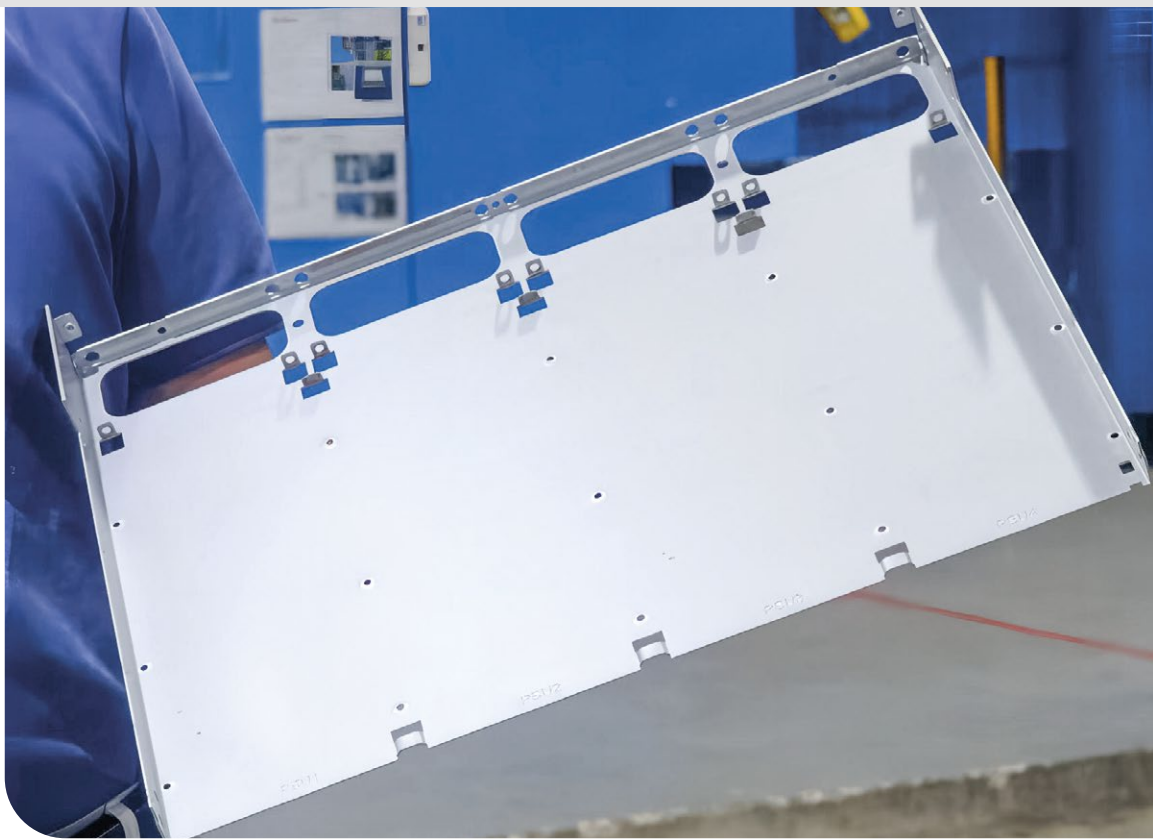
/// Over the past year, Prima Power's equipment has demonstrated stable comprehensive performance, working long hours with good precision, great flexibility, high automation, and high overall efficiency, while requiring less manpower.



Luo Yuanping (right) and Mika Tervala,
Prima Power APAC System Sales Director



A bent sheet metal part produced using Prima Power's automated production line, which integrates multiple processes such as feeding, shearing, punching, sorting and bending, into one.



Scan the QRCode to watch the video interview



AUTOMATED PRODUCTION WITH FULLY-INTEGRATED PRIMA POWER SYSTEMS

The newly built sheet metal workshop produces cabinets and various products to different specifications that are continually coming off the production line and are organized on the AGV, ready to proceed to the subsequent welding and grinding workshop.

While holding a bent sheet metal part, Luo Yuanping explained:

"This part was produced using Prima Power's automated production line, which integrates multiple processes such as feeding, shearing, punching, sorting and bending into one. The entire process is almost entirely worker-free. As you can see, this part features round holes, square holes, countersunk holes, and high-precision bending processing, with punching and shearing accuracy within 0.1mm and bending accuracy within 0.2 degrees. The consistency in processing 1000 pieces is also exceptional."

"Over the past year, Prima Power's equipment has demonstrated stable comprehensive performance, working long hours with good precision, great flexibility, high automation, and high overall efficiency, while requiring less manpower," continues Yuanping. **"These features enable us to achieve maximum production capacity and high-quality results that meet the demands of our customers."**

The EBe series of servo-electric driven bending centers offers a high level of automation and customization, while the Combo Tower provides flexible material handling capabilities.

TOWARDS A BRIGHT FUTURE

"Currently, our Zhuhai factory has over 300 employees and has achieved parallel, efficient, and cost-effective production of power distribution cabinets, data storage cabinets, intelligent light poles, 5G power supplies, etc. Our production capacity allows us to produce 4,000 outdoor cabinets and 10,000 microstation battery lines per month," adds Yuanping.

SUNSEA AIOT supplies products and services to major Chinese communication operators like **Mobile, Telecom, Unioncom, and Tehta**, and also to renowned international communication equipment companies such as **Ericsson, Nokia, and ZTE**. **The Zhuhai factory aims to achieve an annual revenue of 3 billion RMB**. With a positive outlook, Luo Yuanping is confident about achieving this goal in the near future.

AUTOMATION, THE KEY TO SUCCESS

HOW AUTOMATED SYSTEMS AND DIVERSIFICATION CAN BOOST PRODUCTION CAPACITY

RAYTEC LLC, A FOURTH-GENERATION PENNSYLVANIA FAMILY BUSINESS, HAS EXPERIENCED RAPID EXPANSION BY INVESTING IN PRIMA POWER EQUIPMENT AND TURNING THEIR OPERATION FROM COMPLETELY MANUAL TO FULLY AUTOMATED.

How to boost production capacity in sheet metal fabrication?

Glen Zimmerman, owner of Raytec LLC, New Holland, PA, has a simple philosophy: **Automate production wherever possible.** Raytec is now in its fourth generation of family management. Zimmerman's grandfather founded the company in 1956 producing mainly building products. His father named the company Raytec

in 1971 and expanded the company's production line to include agricultural equipment, and added a shear, press brake, and spot welder to the equipment list.

Today, the company has grown to fill a 44,000-square-foot facility with an extra 46,000-square feet of space that will be completed in 2023. In addition to the building and agricultural products, the job shop market is now a growing area of the company's rapid expansion. **"We try to maintain diversity so we are not just locked into one segment of the business,"** explains Zimmerman.

"We bought our first CNC press brake in 1992. We had a CNC stand-alone turret punch press for a number of years that was a manual load/unload. As our production demand kept growing over the years, we saw the need to invest in automation in order to minimize labor, maximize throughput, while increasing accuracy."

Glen Zimmerman, owner of Raytec LLC, checks the schedule for the company's EBe panel bending machine.





Prima Power system has increased Raytec's capability and sped up their turnaround times, while improving part accuracy and consistency.

COMPANY HIGHLIGHTS

RAYTEC LLC

LOCATION: New Holland, PA, USA

FOUNDED: 1956

FIELD OF BUSINESS: Construction, Agricultural Equipment, Custom metal fabricating

PRIMA POWER MACHINERY

- Shear Genius SGe8
- EBe Express Bender
- Picking and stacking robot (PSR)
- Combo Tower

RAYTEC LLC'S PATH TO AUTOMATION WITH PRIMA POWER

In 2015, the company purchased a fully-integrated automated system from Prima Power. The first stage included a Shear Genius servo-electric punch/shear combination SGe8 with a C1500 sorting conveyor.

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

"We went from a completely manual operation to an automated process," says Zimmerman. **"Because we are a job shop, we never know what job is coming through our door next. We needed the most versatile machine tool that we could purchase. We chose Prima Power also because we liked the way it integrates the software control to the machine. A big plus for us was the servo-electric feature: we went from the hydraulic world to servo-electric world and we are very happy with that process."**

"We were impressed by how easy it was to upgrade with Prima Power," continues Zimmerman. **"We talked to them about upgrading and adding more equipment down the road. Prima Power had a clear path forward to allow that to happen."**



Although it was a tight fit, Raytec placed its new compact punching/shearing/panel bending line neatly on one side of its facility.

/// A big plus for us was the servo-electric feature: we went from the hydraulic world to servo-electric world and we are very happy with that process.



Raytec's ultimate goal was to complete the installation of a compact Prima Power PSBB line (Punching/Shearing/Buffering/Bending) to process blank sheets into ready-bent, high-quality components automatically. The Combo Tower storage allows the processing of components from a variety of materials, which can be changed, as programmed, automatically.

The sheets are transferred into a Shear Genius punch/shear cell. After shearing, the components are sent to buffering and subsequent bending in an automatic bending cell.

By 2020, Raytec had begun the process for total automation.

First, a 14-station Combo Tower was installed. "This allowed us to load and run multiple materials very efficiently and quickly," explains Zimmerman.

THE BENEFITS OF AN INTEGRATED PANEL BENDING LINE

The company also purchased Prima Power EBe servo-electric Express Bender, a bending solution that is designed specifically to achieve maximum productivity, quality, and repeatability.

At the same time, the company added the PSR stacking robot which provides high flexibility and allows it to automatically stack larger parts. Material flow can be arranged to transfer parts directly to automatic bending, to balance the different time requirements of bending and punching/shearing, to exit material from the system, and to bring new material into it.

Parts are always placed directly to the stack and never dropped.

The PSR with buffering functions allows the reorganization and optimization of production flow from the Shear Genius to the EBe. "The bender has been phenomenal," confirms Zimmerman.

"I would not want to be without it. We were looking for flexibility and versatility being the key to the job shop business. On our customer side, we were seeking ways to fulfill missed opportunities. We saw that there were very few, if any, integrated panel bending lines in the job shop market. This allowed us to open up the small- to medium-sized volume market to have fully-integrated panel bending capabilities in the job shop market. Historically, most of the panel bending lines have been found in dedicated manufacturing lines."

*"The Prima Power solution has other benefits," adds Zimmerman. "The bender is integrated in line to the SG, so there is no material handling in parts coming down the line. The programming of parts is a fully-automated setup. We don't touch the part until we unload it and stack it on the pallet. That is the first human intervention needed on the entire line. **This solution allows us to maintain the quality, the consistency, and fast throughput with very little labor involved.**"*

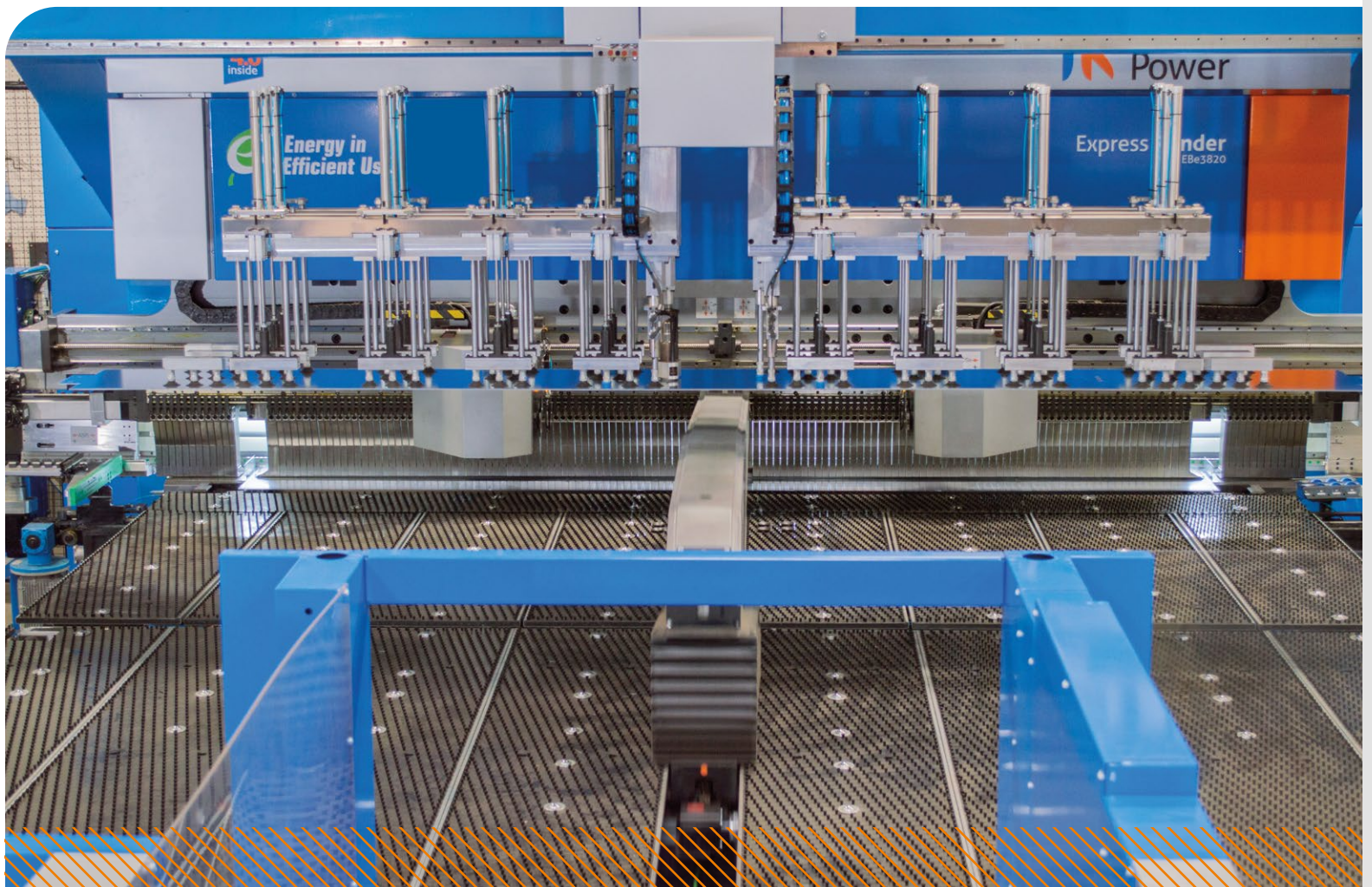
UNLOCKING NEW CAPABILITIES THROUGH PRIMA POWER AUTOMATED SOLUTIONS

*"The Prima Power equipment is very efficient because of the servo-electric system," reflects Zimmerman. "It is **highly versatile, it has increased our capability and sped up our turnaround times, while improving part accuracy and consistency.** But most importantly it gave us the capability to run three shifts with the one-shift operation. **It increased our capacity dramatically.**"*

Once the new addition to the building is complete, Raytec will continue to evaluate further automation options from Prima Power, such as coil cut-to-length integration and the Night Train FMS automated material and information system.

Portions of this article were used in the article that appeared in the March, 2023 issue of the FABRICATOR.

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we never know what job
is coming through our door next.
We needed the most
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STRENGTHENING BUSINESS VALUES THROUGH TECHNOLOGY

FINNISH COMPANY CHOSE PRIMA POWER TO MEET ITS EFFICIENCY AND SUSTAINABILITY GOALS

PIPEMODUL OY, A FINNISH FAMILY BUSINESS PRODUCING PREFABRICATED PIPELINE AND CABLE BOXES, CHOSE PRIMA POWER'S SERVO-ELECTRIC PRESS BRAKE, ENHANCING ITS COMMITMENT TO RESPONSIBLE MANUFACTURING PRACTICES.

For a company that values environmental awareness and energy efficiency, finding technological solutions able to meet its efficiency and sustainability goals is crucial. That is why Pipemodul Oy, a family business located in Mikkeli, Finland, has chosen Prima Power's servo-electric eP 1030 press brake, which provides versatile production opportunities while consuming less power and requiring less maintenance.

THE STORY OF PIPEMODUL: FROM IDEA TO SUCCESS

Pipemodul Oy was founded by Vesa Partanen in 1999, after developing an industrially prefabricated building technology box. **The core idea of the building technology enclosure was to make plumbing renovations in real estate easier, cleaner and faster. The purpose was also to get more industrial thinking into the field.** This is how the company's flagship, the openable pipemodul® system, was created. In addition to renovation projects, the company's products are also employed in new building constructions.

Today, Pipemodul is specialized in the design and industrial production of prefabricated pipeline and cable boxes, and employs around twenty people in the field. Vesa Partanen's son, Asko Partanen, has been the company's CEO since 2008. **The Pipemodul solution has already been used for more than 20 years in over 4,000 locations**, both in residential and public buildings mainly located in Finland and Sweden.

CEO Asko Partanen is satisfied with the company's latest investment, Prima Power servo-electric eP 1030 press brake.



Technical manager
Sami Lehto from Pipemodul
(right) and sales manager
Jani Sillanpää from
Prima Power.



Ecological factors, such as energy efficiency, played a significant role in the machinery investment decisions.

PRIORITIZING SUSTAINABILITY WITH PRIMA POWER'S PRESS BRAKE

Pipemodul's new investment, Prima Power's servo-electric eP 1030 press brake, was put into operation at the beginning of 2023. "We chose Prima Power's press brake, because we felt it was good for our needs both in terms of technology and other features," says Partanen. "Service availability was also an important criterion in the procurement. The people at Prima Power are professional and motivated, and we always get fast and good service from them."

Environmental and energy issues are important to Pipemodul.

The company's products have a long life cycle and the amount of waste generated at the installation site is very small. **These values were also reflected in the machine selection.**

Prima Power's servo-electric press brakes are known for their sustainability, efficiency, and high productivity. They offer versatile production possibilities with lower power consumption and maintenance needs. Furthermore, they eliminate the need for oil purchase and processing.

In addition, the easy programming and high accuracy help to minimize material waste during the production process. Electric servo drive combines productivity, precision, flexibility and reliability while also considering environmental aspects.

"Ecological factors, such as energy efficiency, played a significant role in the machinery investment decisions," explains Sami Lehto, Pipemodul's technical manager. **"The press brake is easy to operate, and has fast working movements and quick tool change. Users have reported positive experiences and high satisfaction with the new machine."**

Prima Power servo-electric press brake installed at Pipemodul Oy offers lower power consumption and maintenance needs.

COMPANY HIGHLIGHTS

Pipemodul Oy

LOCATION: Mikkeli, Finland

FOUNDED: 1999

FIELD OF BUSINESS: Design and manufacturing of building technology elements. Owner of the pipemodul® system.

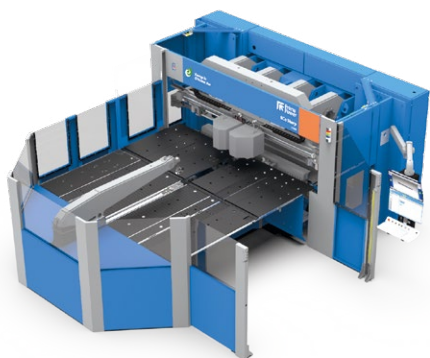
PRIMA POWER MACHINERY

■ eP 1030 press brake



PANEL BENDERS

PRODUCT FOCUS



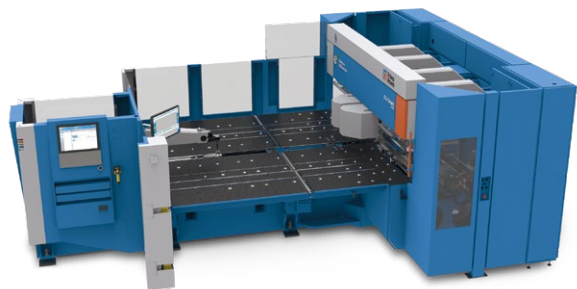
BCe Sharp

Entry-level panel bender to satisfy the widest range of production needs.



FBe Fast Bend

Semi-automatic bending solution for simple, flexible and accessible production.

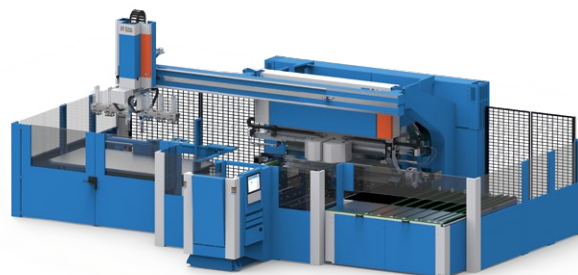
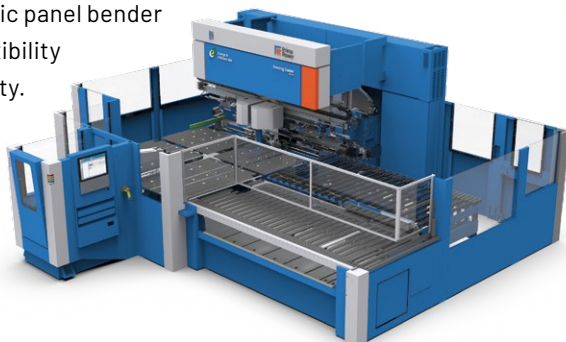


BCe Smart

Ergonomics and intelligence available to the operator at affordable prices.

BCe Bending Centre

Semi-automatic panel bender combining flexibility and productivity.



EBe Express Bender

Fully automatic panel bender to boost your productivity and performance to the maximum.

PRESS BRAKES

eP Series

Servo-electric press brake family for outstanding reliability and maximum productivity, capable of meeting any production needs.



eP Genius Series

Efficient servo-electric press brake with fast, automatic tool change storage.

Available also as a Duo version with two machines connected to the same storage (eP+eP or eP+hP).



hP Series

Hydraulic bending solution for the high tonnage market featuring an ECO package for energy saving.

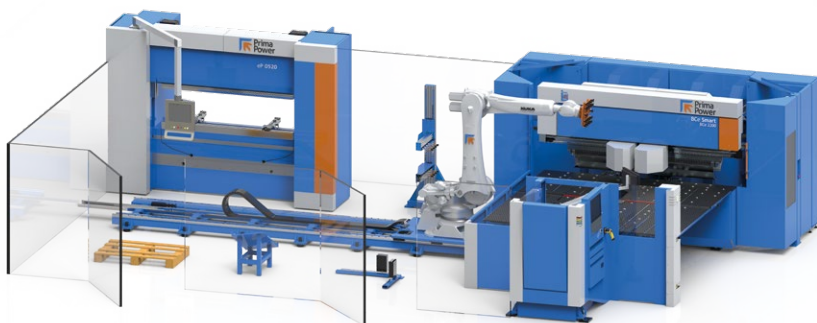
PANEL BENDERS AND PRESS BRAKES CAN BE INTEGRATED WITH A 6 OR 7-AXIS INDUSTRIAL ROBOT EQUIPPED WITH FURTHER DEVICES TO HANDLE THE MATERIAL OR TO SUPPORT THE BENDING.



eP press brake with 6-axis robot



Fast Bend panel bender with 7-axis robot



BCe Smart panel bender and eP press brake with 7-axis robot

WHAT THE CUSTOMERS SAY

/// The EBe has given us the ability to be competitive on jobs that were previously out of our range, such as a part with multiple setups. ///

Lasertech Metal Works (Georgia, US)

/// This is a truly unique bending solution with a panel bender, a robot and an integrated press brake. But what we like most is the fact that the whole system is extremely flexible! ///

Schulthess (Switzerland)

/// Servo-electric machines perfectly match our vision when it comes to production because they only use power and energy when needed and only in the required amounts, without waste. ///

Clivet (Italy)

/// The efficiency of the EBe allows us to take a job that takes 10 hours on a manual press brake and complete it in one. ///

Scott Springfield (Canada)

/// The user interface is friendly even for people who were not tech savvy. The servo-electric press brake makes it possible for a relatively new operator to hit the ground running. ///

Dunbarton Corp. (Alabama, US)

/// In addition to short set-up times, a big advantage of the bending cell is that you can make any shape - not just simple chamfers, but also, for example, bending radii. And that with only one tool set. In addition, it can be quickly adapted to different product sizes. ///

Biohort (Austria)

STREAMLINING MANUFACTURING PROCESSES

Francesca Pacella

Prima Power
SW Product Manager



PRIMA POWER NC EXPRESS CAM: POWERFUL FEATURES THAT BOOST EFFICIENCY

AS THE DEMAND FOR STEEL DOORS AND PANELS RISES, MANUFACTURERS NEED TO INCREASE PRODUCTIVITY AND QUALITY. PRIMA POWER NC EXPRESS CAM OFFERS KEY FEATURES TO IMPROVE PANEL MANUFACTURING EFFICIENCY.

In recent years, there has been an increase in the demand for high-quality steel doors and panels, driven by significant megatrends such as urbanization and sustainability. Consequently, manufacturers must identify solutions that allow them to maximize productivity and quality in their production processes. Similar-looking panels may have important differences to consider during production, such as left or right-handed doors. Prima Power NC Express CAM boosts panel manufacturing efficiency thanks to several features; here we will focus on two in particular: the Unfolding and the Parametric modules.

UNFOLDING MODULE

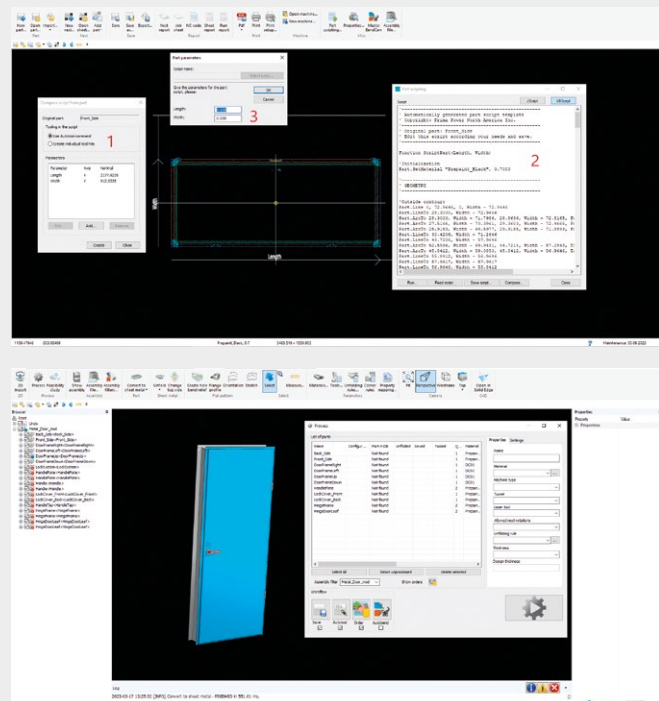
Using the Unfolding module, you can derive all the metal parts that make up a panel, along with material details, bending technology, K factor, and bending angle, directly from the 3D file and save it in the database.

BENEFITS

- Faster programming: from the 3D CAD file to panel production in just a few clicks
- Increased accuracy: bending parameters are calculated using algorithms
- Reduced costs: errors, waste and production time are minimized
- Improved design flexibility: no limits to shape complexity



Watch our video pill
on Parametric Programming:



PARAMETRIC PROGRAMMING MODULE

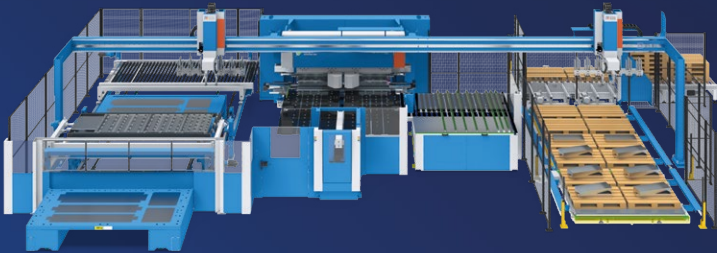
With Parametric programming, users can create programs based on variables instead of fixed values. This enables a single program to produce multiple parts that have slight variations in dimensions or features, eliminating the need to write separate programs. It is particularly beneficial when there are frequent changes in design or production parameters.

BENEFITS

- Higher efficiency: a single program for different parts reduces programming time and risk of errors
- Enhanced accuracy and consistency: starting from one parametric code, multiple parts can be obtained based on a set of pre-defined variables
- Reduced programming costs: less time and effort required for program generation
- High flexibility: part design changes are easier to make.

START eBENDING AND NEVER STOP

GIVE NEW ENERGY TO YOUR BUSINESS. CHOOSE PRIMA POWER



The fully-automated **electric panel benders** deliver ultimate precision, flexibility, and efficiency.

- 1 **Unparalleled productivity and greatly reduced power consumption** with 20+ servo-electric axes.
- 2 **Advanced control of complex geometries** for a wide range of **materials**, including aesthetic ones.
- 3 Production **flexibility** and equivalent productivity of 3-5 press brakes for a fast return on investment.



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