The SYSTEM

Unique production power
based on unrivalled experience
Contents

03  Next level
04  Choosing an innovation leader
05  Prima Power Systems 30 years
06  The Software
08  Prima Power PSBB Direct
10  Prima Power PSBB
12  Prima Power LPBB
14  Prima Power Night Train FMS®
16  Prima Power The System
20  The Shear
21  Coil line connection
22  Combo Tower and FL storage
23  Combo Tower Laser
24  The Laser
25  The Combi
26  The Punch
27  The Bend
28  The Press
29  Industry 4.0
30  Prima Power Services
31  Contacts
Today’s volatile market demands that companies be competitive, accurate and reactive. Prima Power products continue to evolve, bringing efficiency to a whole new level.

More productive machines, new automation solutions, and easy-to-use option suites are designed to meet the customer’s real needs. To provide the best Prima Power technology, our team of experts will always be available to listen, assist and advise.

**What can be found in this brochure**

- **Prima Power products** for specialized and multi-purpose productions.
- **Wide range of automation solutions** to manage different and whole production cycle.
- **Key to better productivity** Worldwide Prima Power network with decades of experience in profitable production of high-quality sheet metal products.
Prima Power is a leading specialist in machines and systems for sheet metal production. Our offering in this field is one of the widest and covers all applications: laser processing, punching, shearing, bending, automation and storages. The Group employs over 1,800 people and has manufacturing sites in Italy, Finland, China and the US, as well as a worldwide commercial and after-sales presence.

Choosing an innovation leader

The Range

Thanks to the modularity of our products, we are able to offer manufacturing solutions ranging from single stand-alone machines up to the complete system for the management of work phases, flow of information and material handling. The integration with other technologies of sheet metal processing included in our product range, allows us to offer our customers the most complete production solutions possible.

THE BEND | Wide range of solutions for bending and automation.
THE COMBI | Integrated solutions for punching & laser cutting.
THE LASER | Laser machines and systems for 2D and 3D cutting, welding and drilling.
THE PRESS | Fast, accurate and efficient servo-electric press brakes.
THE PUNCH | State-of-the art, versatile solutions for servo-electric punching.
THE SYSTEM | Full and modular range of solutions for the management of the whole working process.
THE SOFTWARE | Prima Power software solutions to maximize throughput.
The history of Prima Power’s Flexible Manufacturing Systems starts from 1990. While today’s technical solutions are naturally far more advanced, the fundamental philosophy remains unchanged.

The Prima Power years of experience guarantee that the solution for each function, as well as the overall engineering of the system, are based on thoroughly proven knowhow in

- software
- machine tools and cells
- material handling automation
- system customization
- customer support and service

Prima Power FMS technology automates the material and information systems of a facility and combines individual manufacturing stages into a single flexible process. With Prima Power FMS technology, the manufacturer gets superior cost efficiency in both serial production and also in small batch fabrication.

**EXPERIENCE**
50 years of experience and more than 13,000 installed systems worldwide.

**INNOVATION**
An expert R&D team committed to research the most competitive technology for our customers.

**GREEN MEANS**
Sustainability and social responsibility are characteristics of modern companies and add to competitiveness.

**MODULARITY**
Our machines can also be combined with our automation modules to create a complete system for the whole working process.
The ever-updated suite of software products from Prima Power provides a complete set of solutions covering all stages of sheet metal processing, from the connection to ERP systems, to the finished product and through the collection of production data.

Prima Power software solutions match the extensive product line, from stand-alone machines to automated systems. Together, they provide optimum productivity and efficiency in terms of time and material savings. Manufacturing order can be optimized according to the need of further manufacturing phases or to ensure the fastest possible throughput time.

**USABILITY**
Prima Power software is user-friendly and easy to use because everything is based on a common platform.

**MODULARITY**
Prima Power software is divided into logical packages, which can be extended according to needs.

**CONTINUOUS UPDATING**
Our software is continually updated to be aligned with the evolution of the machines.

**Prima Power Tulus® Office Premium**
- Faster throughput time
- Maximum machine load and running time
- More visibility to production
- Less human errors
- Operators have more time for productive tasks
- Optimized material flow
- Even machine load
- Digital data flow
- Automatic reporting
- Connectivity with other systems, e.g. ERP, MES and APS

**PRIMA POWER PROVEN QUALITY**

The Software
The production process is monitored step by step

This example describes the automated production process utilizing Prima Power software products.

1. Order is received from the customer.

2. ERP system orders the parts from Tulus® Office Premium, which then moves the parts to the defined work phases.

3. Geometries (2D/3D) or structural product orders are handled either in the background or through the user interface into ready part and bending programs. Unfolding information is collected and then used when creating bending programs.

4. Parts can be programmed either fully automatically or through the programmer’s work queue. Available materials are known in real time through the ERP. Bending programs are linked to the part automatically.

5. In nesting, the manufacturing of the entire line can be optimized, i.e. the manufacturing time of the part on both punching and bending machines is observed and an optimal throughput time can be achieved.

6. You can define a manufacturing order for the parts in the system, so that parts can be for example assembled in a preferred order.

7. Production orders are transferred to the machine load calender of a work phase, from where the task is inserted into the work queue either automatically or manually. The calender also allows optimizing of the production order according to materials and tools.

8. All process steps are reported back to the ERP system, which enables continuous visibility of the production status.

9. The system reports in real time the materials used, parts produced and the time spent on them.
Prima Power PSBB Direct

The PSBB line manages the material flow in flexible ways and reduces the lead time from raw material to ready components. PSBB stands for Punching + Shearing + Buffering + Bending.

The productivity offered by this concept derives from integration of

- Versatile servo-electric punching
- Integrated servo-electric shearing
- Servo-electric bending
- Automatic, flexible material flow and
- Sophisticated software

More of the machine on our website

Watch the video
PSBB Direct with highly optimized production will offer continuous material flow to the Panel Bender. Fast Loading Storage provides the exact materials needed thanks to the sheet by sheet loading feature.

In order to meet the requirements of modern production, PSBB offers high flexibility to achieve finished products fast. The PSBB, including the Parametric Programming, generates a customized product and manages the production quickly and efficiently.

- Automatic raw material storage and inventory – sheet by sheet
- Servo-electric punching and cutting machine for blanks production
- Part buffering and stacking area for flat components
- Automatic turning for pre-painted or sensitive materials
- Bending for parts needed

**FLEXIBLE WAYS TO PRODUCE**

Direct material flow from Shear Genius® to bending cell EBe

Simultaneous stacking on tables/wagons and retrieval of components from tables/wagons to bending cell EBe

Use of the whole stacking area in unattended operation

Suitable for diverse production, e.g.

- Steel doors & frames
- Elevators & escalators
- Steel furniture & panels
Prima Power PSBB – a Flexible Manufacturing System

Basing on decades of experience in modular Flexible Manufacturing Systems Prima Power created PSBB line, which processes blank sheets into ready-bent, high-quality components automatically. PSBB stands for Punching + Shearing + Buffering + Bending.

The productivity offered by this concept derives from integration of
- Versatile servo-electric punching
- Integrated servo-electric shearing
- Servo-electric bending
- Automatic, flexible material flow and
- Sophisticated software

1. Automatic Combo Tower for raw materials. Sheet by sheet loading available as option.
2. Loading device, LD
3. Servo-electric Shear Genius® SG punching and shearing unit
4. Scrap conveyors
5. Sorting unit, SU
6. Sorting conveyors, C1500
7. Sheared part buffer, SPB
8. Picking & stacking robot, PSR
9. Buffer area for parts to be bent
10. Position conveyor
11. Input and output wagons for parts
12. Bend part turning device, BTD
13. Loading device of EBe
14. Automatic, servo-electric panel bender, EBe
15. Unloading system with tilting unloading table, TUT
16. Tulus® graphical user interface
FLEXIBLE PRODUCTION
The parts in production can be very different, even on the same sheet. Some are perforated fast and bent slower, some vice versa. With picking and stacking robot PSR the material flow is arranged to allow full productivity of the machines of the system. When there is less need of bending the parts are transferred directly to BTD. When the output from shearing is faster than the bending cycle PSR buffers the parts to tables balancing the different time requirements of the machines. PSR can also unload and load material produced in the system. We call this flexible production.

FLEXIBLE WAYS TO PRODUCE

- Direct material flow from Shear Genius® to bending cell EBe
- Use of the whole stacking area for buffering in direct connection
- Simultaneous stacking on tables/wagons and retrieval of components from tables/wagons to bending cell EBe
- Use of the whole stacking area in unattended operation

Suitable for diverse production, e.g.

- HVAC units
- Generators & canopies
- Subcontracting

More of the machine on our website

Watch the video
Prima Power LPBB

LPBB stands for Laser cutting + Punching + Buffering + Bending. The outstanding productivity offered by the LPBB flexible manufacturing system results from Prima Power modular technology and intelligent material flow management.

- Versatile servo-electric punching
- Modern laser cutting
- Servo-electric bending
- Automatic, flexible material flow and
- Sophisticated software

1 Servo-electric punching and fiber laser cutting, Combi Genius®
2 Small part sorting for laser cut parts, SU
3 Loading and stacking robot LSR
4 LSR input/output station for raw materials, stacked parts and skeletons
5 Direct connection from LSR to Express Bender EBe
6 Part centering device PCD and bend part turning device BTD
7 PCD wagon for external parts feed in
8 Servo-electric Express Bender EBe
9 Tilting unloading table TUT
10 Tulus® graphical user interface
For a good reason...

Very fast reaction times are expected in modern production. The machine needs to be flexible and extremely fast for a quick response to production orders, often for very small quantities. There may be a rush order or a test series to prove delivery capacity; here the laser is often the answer. Again in longer series punching adds manufacturing speed and cost efficiency, allowing e.g. versatile forming and providing competitiveness unmatched by individual laser or punching machines.

**WITH LASER CUTTING THERE ARE:**
- no burrs
- no nibble marks
- no problems with tonnage
- no tools
- no die clearance
- no sharp corners
- no delays – fast set-up

**... AND WHEN YOU PUNCH YOU CAN ALSO:**
- tap
- countersink
- form
- rib
- make extrusions
- hem
- make louvers
- use wheel tools
- use a wide range of Multi-Tools®

**...AND SERVO-ELECTRIC BENDING FEATURES:**
- high accuracy and surface quality
- high repeatability
- versatility and flexibility
- customization with a range of options
- high productivity with automatic tool change
- off-line programming
- low running costs

Suitable for diverse production, e.g.
- Food service equipment
- Hospital & Lab equipment

More of the machine on our website

Watch the video
Trains don’t stop for the night...

From Night Train FMS® to intelligent, modular Industry 4.0 ecosystems
...why should your production
Night Train FMS®

The history of Prima Power’s Flexible Manufacturing Systems is a long and famous one. The first FMS solution was introduced at Blech exhibition in Essen in 1990. During the same year the first FMS solution was installed and hundreds of others have followed. 30 years of experience and high level engineering by specialists prove that Night Train FMS® is leading technology in automated flexible manufacturing. Prima Power’s automated storage solution with low profile crane and shelf structure offer excellent storage capacity with a smaller footprint.

NightTrain FMS® automates the material and information systems of a facility and combines individual manufacturing stages into a single flexible process. Systems are customized using the wide Prima Power range of high performance machine tools, integrated cells, automatic material handling solution and software. Due to the wide range and modularity, the optimum solution can be found for every application and all system sizes.

**NIGHT TRAIN FMS® IS A SYSTEM THAT MEETS SPECIFIC REQUIREMENTS AND ADAPTS AS THEY CHANGE**

Prima Power’s SYSTEM technology provides flexibility beyond our own range of machines and cells. The standard Prima Power interface allows also the integration of other suppliers’ machines in the system.

**Highlights**

- Automatic information flow from programming to production reporting,
- An integrated production system, reducing the whole fabrication process into a single stage,
- Fully automatic manufacturing stages,
- Fully automatic material handling including intelligent buffering
- Minimum manufacturing time, and maximum production time

**NIGHT TRAIN FMS®**

- Max. number of storage positions is unlimited
- Intelligent and dynamic cassette position management ensures optimal serving time for connected machine cells and stations
- Night Train storage can serve as a material storage and as buffer storage for parts as well

Flexible Manufacturing Systems since 1990

We have not yet seen a factory too big for us. Can you challenge us?
A system that meets specific requirements and adapts as they change
The Shear

SERVO-ELECTRIC SHEAR GENIUS®

Unique combination of integrated punching and shearing only Prima Power can offer. With 30 years experience.

The vast majority of all fabricated sheet metal components are rectangular. The economical method to produce them is to first perform punching and then shear the components loose in the automatic process with an integrated right angle shear.

Right angle shear technology is used in most varied applications like panels, doors, HVAC, cabinets etc.

The punch & shear combination can work as independent production cells, or as central units within automatic material handling systems up to a factory-wide FMS level.

- Automated flexible fabrication
- No skeletons, less punching scrap – savings in raw material
- Higher sheet utilization with shearing technology
- No nibble marks
- Higher productivity
- Low manufacturing costs
- Fast return on investment

1. FLD Night Train FMS® connection for raw material
2. Loading Device LD
3. Servo-electric Shear Genius®, punching & forming unit, 30 t, 1,000 hpm
4. Servo-electric Shear Genius®, shearing unit, blade 1,000 x 1,500, ACS
5. Scrap conveyor
6. Sorting conveyor CI500 with Night Train FMS® connection
7. Stacking System STS
8. STS Night Train FMS® connection for stacked parts

For sheets up to 3,100 mm x 1,565 mm there is Prima Power Shear Brilliance with X-traverse 4,070 mm and Y-traverse 1,640 mm

More of the machine on our website
COIL LINE CONNECTION

In certain types of production coil material can be chosen for optimum material usage. Sheared material is loaded into the fabrication process, and it can also be routed into the storage while the cell or system operates.

Benefits of a coil connection include the possibility of nesting more than one part in X-direction and simple balancing of punching and bending.

With a coil line, all material lengths are “standard” – nesting (NC Express™ coil nesting) can be made for optimum sheet length. The saving potential is truly significant as a result of lower price of coil material, no material wasted in filler parts and no need to stock sheet material of different sizes.

HANDLING OF SMALL AND UNSTACKABLE PARTS

A sorting conveyor C1500 connection to NightTrain FMS® is available.

C1500 provides an intelligent solution for material handling of parts which cannot be stacked and parts that will be bent on a manually operated press in the following work stage, etc. Thus it also extends the possibilities of utilizing unmanned night shifts productively for long runs and fabrication of small components.

EUR pallet cassettes with collars or EUR pallet cassettes with boxes are used in the connection. The cassette is moved under the sorting conveyor. More sorting addresses can be added by programming cassette movement in crosswise direction.
FL storage enables fast availability of different materials for production where batches are small and material changes continuously, like door and steel furniture manufacturing.

FL storage consists of FLD (Fast Loading Device), shelving unit, Night Train cassettes and a safety solution.

Shelving unit has three loading positions, where sheet bundles on cassettes can be brought with a forklift. Sheet material can be inserted onto cassettes also on wooden pallets.

FLD gripper can pick up sheet material directly from any cassette on loading position and deliver sheet material either directly to machine connection or store materials to cassettes on fixed positions in the shelving unit.

FL storages are available in different heights and with material positions from five to twelve.

COMBO TOWER is a flexible storage solution for automating the material flow. It makes different materials available whenever needed automatically and without delays; it can also serve as an intermediate storage for ready components and as a buffer.

There can be one or two shelving units in the Combo Tower storage and height can be chosen as needed. Up to three machines or cells can be integrated in the system.

When fast response time for material change is needed, a highly productive optional feature is available for loading single sheets with a special gripper to the machine cells equipped with loading device LD connection to Combo Tower.

Combo Tower integration provides also an optimal solution for lights-out production.

More of FL storage on our website
More of Combo Tower on our website
Combo Tower Laser is a flexible storage system with integrated loading and unloading features for 2D lasers. Combo Tower Laser is a key module to automate material flow. It makes different materials available whenever needed automatically and without delays; it can also serve as intermediate storage for ready cut components along with skeleton.

There can be one or two shelving units in the Combo Tower Laser and the height can be chosen by needs. Model with one shelving unit is designed to serve one 2D laser.

MORE CAPACITY WITH TWO SHELVING UNITS

When two shelving units are included in the Combo Tower Laser a second machine cell can be integrated as part of the system; depending on the required work stages and techniques, these can be selected from the wide range of Prima Power solutions for punching, laser cutting, integrated punching / shearing and punching / laser cutting.

Combo Tower Laser supports raw material delivery directly on cassette or along with wooden pallets. Customers can choose shelving unit configuration according to their needs: cassette intervals as well as stack height can be chosen according to production requirements.

LIGHTS-OUT PRODUCTION

Combo Tower Laser also provides an optimal solution for lights-out production as capacity of available raw materials and unloading positions for skeletons can meet production requirements. Combo Tower Laser can be equipped with Night Train FMS® connection.
The Laser

LASER GENIUS + LU + LST

Highly profitable for a production mix more oriented towards thin-medium gauges. Best quality, high accuracy and productivity without compromises on the whole thickness range thanks to the best integration of all machine components.

PRODUCTIVE
High dynamic linear drive increases productivity on thin sheets (+15%) compared with conventional drive systems.

ACCURATE
Precise and repeatable in cutting and laser head positioning thanks to the effective CNC management of linear drive.

PROFITABLE
Low operating costs thanks to high energy efficiency and reduced maintenance.

MODULAR
Suitable for any production need, offering a full range of solutions for automation.

USER FRIENDLY
Single focusing lens system with automatic nozzle changer. Easy to use programming software and Prima Power operator interface.

Reliable part sorting with LST robot. Laser cut parts can be picked and stacked in a reliable way when an LST robot is integrated as part of 2D laser cell. Maximum process reliability is ensured by picking parts direct from the cutting head and active check of part separation from the skeleton. LST can be used as independent cell or connected to storages. LU is an efficient loading/unloading unit for lasers and can be connected to all Prima Power 2D lasers. LU enables flexible automation with 2D lasers as well as the possibility to integrate the cell into systems.

More of the machine on our website | Watch the video
The punching and laser cutting combi machines were introduced to the Prima Power product family in 1989. It was noticed that combining different work stages accelerated the manufacture of the final product and reduced the production costs.

A modern combi machine uses numerically controlled, servo-electric axes, which provides outstanding energy efficiency, low maintenance requirement and a high speed of operation. The cornerstones of its productivity include large tool capacity, a wide range of special tools available and easy and fast setup change.

As the best laser power source for the combi machine, fiber laser has a very high efficiency up to cut material to 8 mm thickness.

LSR, loading and stacking robot for automatic material loading and sorting, loads sheets to the machine and stacks finished work pieces onto pallets. Due to the servo drive motion system the stacking is extremely accurate.

Over 30 years of integrated punching and laser cutting

More of the machine on our website
Prima Power has gathered experience in the development of turret punch presses since the early 1980’s, and even if the modern solutions are very different, the targets have remained constant: always more ease of operation and higher productivity.

A modern turret punch press uses numerically controlled, servo-electric axes, which provides outstanding energy efficiency, low maintenance requirement and a high speed of operation. The cornerstones of its productivity include large tool capacity, a wide range of tools available and easy and fast set-up change. Forming and other auxiliary work stages, and ease of use are further factors reducing the manufacturing cost per component thus making the turret punch press a productive and competitive manufacturing solution.

LST loading and stacking system can be chosen for automatic loading, component picking and stacking to programmed coordinates in the palletizing area.

LST is a compact high-performance automatic loading and stacking robot. LST loads the sheets into the machine, picks the parts and sorts them to stacks to be used in the following process steps. The entire working cycle of the machine is automatic.

More of the machine on our website
Prima Power’s experience in applying servo-electric technology in automatic panel bending solutions has made it possible to revolutionize traditional manual bending. The FastBend FBe replaces the traditional press brake with an automatic bending technology, which allows more bends for each side in an automatic sequence without any manual intervention including positive/negative inversion, smashing and radius bends. Only the loading, the rotation and the unloading are performed by the operator. The result is quality, speed and elimination of mistakes.

With BCe Smart the operator loads the blank metal sheet and unloads the bent component in a single ergonomic sequence while the machine automates all the bending cycles.

Semi-automatic bending cells BCe Smart and FastBend are connected to material storages via MO/MOL station for raw material and unloading of stacked parts.

**AUTOMATIC BENDING CELL**

Prima Power’s **EBe Express Bender** is a servo-electric panel bender with fully automated operation cycle from the loading of the flat parts to unloading of bent components. EBe is based on a system that allows a high level of customisation to provide maximum productivity.

For more automation, a **picking and centring device PCD** can be installed before EBe. Since the PCD is a multipurpose device, it allows the material flow from different sources to the bending process. It can have direct connection from machining cell (as Shear Genius® in PSBB line) or it can be equipped with a normal wagon (for external parts) or connection wagon either from Combo Tower or Night Train FMS® storages.
Prima Power has been a true pioneer in applying servo-electronics in sheet metal working since 1998. The technology offers eP series press brakes features which bring value to customer in part quality and manufacturing economy. Our press brakes can be equipped with a robot. With robot integration the press brake becomes a fully automated bending and stacking solution.

**SERVO-ELECTRIC BENDING**

**ENERGY SAVING**
50% lower consumption than hydraulic brakes on average.

**PRODUCTIVITY**
30% shorter cycle times on an average and short setup times

**PART QUALITY**
High repeating accuracy thanks to 0-frame construction, servo-electric drives, sophisticated tooling system

**LOW MAINTENANCE COST**
Fewer critical components than in hydraulic machine.

eP press brake is connected to material storages via MO/MOL station for raw material and unloading of stacked parts.

More of the machine on our website
Prima Power FMS technology automates the material and information systems of a facility and combines individual manufacturing stages into a single flexible process.

Putting things together – Industry 4.0

Industry 4.0 is a new era in the history of manufacturing that is revolutionizing the industrial technology and processes through cyber-physical production systems and big data. Following the fourth industrial revolution digitization trend and focusing on connectivity and interaction between machines, people and processes, Prima Power is improving operational efficiency, connecting machines to a single platform, enabling seamless production information flow and maximizing machine performance.

To help our customers to fully capture the experience of Industry 4.0 and unleash the business potential of digital manufacturing, Prima Power has built a unique Industry 4.0 solution offering in three key areas:

• Smart Machines & Factories to real-time and historical parameter data collected through sensors and cameras
• Smart Software to seamless production information flow, connectivity to ERP and MES through storing machine-generated data in the cloud
• Smart Remote Care to machine data-driven analytics and predictive maintenance services

Prima Power is driving the next industrial revolution as a provider of Industry 4.0 sheet metal manufacturing solutions enabling smart industrial production. With the cutting edge technology and expertise we incorporate Industry 4.0 insights into our products to solve the latest manufacturing challenges and to meet our customers’ needs.
Prima Power Services: key to better productivity

We believe in long-term relationship with our partners, and we think that the real product we deliver to our customer is not just the machine itself, but the production capacity that our customer can achieve with our products and technology. The heart of Prima Power service is the common goal we share with our customer: start, maintain and develop the plant’s production capacity and maximize it.

Our Service covers the whole life cycle of the system and technology and contributes to reach one goal: maximize the productivity and the profit for our customers.

REMOTE CARE
A service for the remote diagnostics and assistance. Skilled service engineers are available to operate remotely with the customer’s CNC.

FIELD SERVICE
In addition to preventive maintenance, we offer high-quality corrective maintenance to guarantee fast recovery when there is a problem. With more than 12,000 machines installed in more than 80 countries, we are able to give our customer the required assistance no matter where they are.

SERVICE AGREEMENTS
We continuously develop preventive maintenance plans for Prima Power machines. Maintenance visits are performed according to the task list specified for each machine type.

SPARE PARTS
Original Prima Power spare parts to guarantee full performance and prolonged durability.

CONSULTATION
Wide range of consultation services on machine operation, programming and maintenance.

UPDATES & UPGRADES
The modularity of the product range often allows upgrading of a machine or manufacturing system even years after the original delivery.
Contacts
Find your local Prima Power representative at primapower.com