The Software

Prima Power Software solutions for maximize throughput

The Bend
The Combi
The Laser
The Press
The Punch
The Shear
The System

The Software
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Next level. Next to you.

Prima Power is a leading specialist in machines and systems for sheet metal working. Our offering in this field is one of the widest and covers all applications: laser processing, punching, shearing, bending and automation.

The Group employs over 1,600 people and has manufacturing sites in Italy, Finland, China and the US, as well as a worldwide commercial and after-sales presence.

What can be found in this brochure

Software products for Prima Power machines, ideal for every production, programming, operator interface, production management and monitoring needs.

All Prima Power software products are in line with the underlying concepts of the Industry 4.0.
Prima Power has a history of providing our customers with the best software solutions to optimize the operation of their machines. 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 matches its extensive product line, from stand-alone machines to automated systems. Together, they provide optimum productivity and efficiency in terms of time and material savings.

The commitment that Prima Power dedicated to the design and development of software for its machines ensures significant benefits for the customer.

**OVERVIEW**
Our software suite allows control of the entire production flow and monitoring of each stage of processing.

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

**USABILITY**
Prima Power software, all based on a common platform, are equipped with simple and intuitive interfaces, which ensure correct use even by unskilled operators. Some modules are developed specifically to be installed on mobile devices, tablets, and smartphones.

**CUSTOMIZATION**
The development of proprietary software allows the possibility of creating any customization required by the customer.

Proven Prima Power Quality

Prima Power software solutions decisively contribute to increase the efficiency of the production process, with clear benefits for environmental sustainability:

- reduction of energy consumption and material waste
- reduction of paper consumption through electronic reporting and file exchange for automatic connections
Technology and solutions for Industry 4.0

Prima Industrie is compliant with the Industry 4.0 guidelines, helping its customers turn their production sites into smart factories: smart and interconnected machines and factory systems which, provided with sensors, are able to return a large amount of information (big data); increasingly powerful and optimized software; digital remote maintenance and diagnostics, also Cloud based. This allows significant benefits in terms of time and cost reduction.
The Prima Power software suite is a true ecosystem that provides the ideal solution to assist the customer in all phases of production, from offline programming to production data collection and reporting. Prima Power software is developed for any customer use, including off-line, on-board, and on mobile devices.

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NC Express e²
Master BendCam
Tulus® Office
Tulus® Cell
Tulus® Bend
P30L
Tulus® Laser
Tulus® Storage
Tulus® MUPS
Tulus® Terminal
Tulus® Production Reporting
Tulus® Performance Reporting
Tulus® Power Processing
Tulus® e-Kanban
**Advanced Programming**
- NC Express e³
- Master BendCam

**Advanced Programming**
- NC Express e³
- Master BendCam

**Machine Control and Program Execution (HMI)**
- Tulus® Cell, Tulus® Bend
- Tulus® Laser 2D
- P30L
- Tulus® Storage
- Tulus® Terminal
- Tulus® MUPS

**Management & Monitoring of Production**
- Tulus® Production Reporting
- Tulus® Performance Reporting

**Industry 4.0**
- Fleet management

**ERP Connection, Production Planning & Control**
- Tulus® Power Processing
- Tulus® Office
- Tulus® e-Kanban
Offline programming

NC Express e³

The NC Express e³ programming CAD/CAM system is an integrated, automated, and easy-to-use tool for the efficient management of Prima Power systems.

NC Express e³ is a modular application: the system can be used as a single parts design program or as a fully automated machine programming system. In both cases, the result is the same: optimized automatic creation of NC codes.

BENEFITS

- **Flexibility:** from manual part preparation and manual nesting to fully automatic processing
- **Support for all technologies:** unfolding, laser cutting, punching, shearing and robot pickup all in one package
- **Commitment:** commitment to support customer production from consultation, training, and support, all the way to customization
**Functions**

**Import**
NC Express e³ allows the import of a wide range of 3D file formats and from a variety of standard CAD programs.

**Unfolding**
You can create precise unfolded flat patterns either from an assembly or a single part model. Flat pattern holds all necessary information for further processing either on a punch, a laser or a shearing machine.

**Autotool**
The automatic tool application process ensures the positioning of the robot gripper which is based on the geometry of the workpiece, on the punching strokes and deformation and the weight of the component.

**Nesting**
NC Express e³ comes with a powerful nesting module for free-form and sheared parts which reduces process time and material consumption.

**Optimize**
NC Express e³ is designed to make Prima Power systems as efficient as possible, including laser technologies, head up/down logic, repositioning, clamp moves, shear scrap hits, common line punch, common line laser cut, laser grid cutting, punch work chute sorting, laser drop door sorting, robot pickup, indexable Multi-Tool®.

**Postprocessor**
Reliable postprocessors proven and tested for Prima Power machines.

**Report**
Fully customizable reporting for operators and management.

**Simulate**
Visual simulation of NC-program.
Offline programming

Master BendCam

Master BendCam is the easy-to-use programming system, with powerful interactive graphical techniques for managing the Prima Power panel benders.

The system may be used as a single part drafting and tooling program or as a fully-automated machine tool management system. It simulates the machine processes in a real manner and generates programs with a greater degree of automation.

**BENEFITS**

*Flexibility:* Master BendCam is a production management tool designed to have the maximum positive impact in terms of flexibility and efficiency.

*Simplicity:* simplified programming through interactive 3D graphics.

*Safety:* intuitive and secure tool configuration and collisions control system.
Programming
The operator can introduce very elaborate bending sequences by modifying a limited number of parameters.

The sequence of scheduled operations (loading, bending, unloading, etc.) can be collected in a tree structure that allows easy program management (possibility to add or remove any operation at any time).

For complex programs, it is possible to create sequences of movements in “teach mode”, indicating the final point of each movement. This allows using all machine capabilities.

Tools management
The operator can easily set and change the configuration of the machine by adding or removing tools through the graphical interface use.

The system allows intuitive calculation of the required tool composition and displays the status during working.

Parametric function
Master BendCam Parametric function allows to stretch X, Y dimensions with automatic internal holes and bumps management and automatic tooling.

Simulation
The complete 3D simulation of the bending process allows for better optimization of operations and quick correction of errors during off-line programming, thus saving time during the machining phases. The software automatically detects possible collisions between mechanical parts of the machine, and warns the operator.

The accurate calculation of the processing time allows operators and management to know the time required to process each piece.
Planning

Tulus® Office

Tulus® Office is the software product for planning and controlling machine capacity. With Tulus® Office software you can monitor the machine status and task list. It is possible to see what is going on with all the machines in the factory in one view. You can also edit the active machine task list and plan and schedule tasks conveniently by using the Tulus® Office calendar.

It also allows the use of production planning.

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**BENEFITS**

- **Optimization**: it is possible to schedule the machine's tasks and process optimization with the calendar. Editing the active task list and modifying the processing sequence.
Planning
It’s easy to schedule machine activity using the Calendar and editing your work list with Tulus® Office. Tasks can also be added on the fly and it’s also possible to schedule the activity of the single day, week, or month.

Tasks list editing
you can operate on the list of machine tasks in your office to add or remove production orders from the activity list or to change the order of processing.

Creation of reports
It is possible to include the Production Reporting and Performance Reporting options in Tulus® Office. With these tools you can create reporting to support production planning and help you analyze where improvements can be made.
H.M.I. / Standard tools

The family of Tulus® machine user interface software solutions controls machine operations, tools, production orders, and stacking of finished parts. Thanks to a simple and intuitive touch screen interface, you can easily manage the parameters and configurations of the machine.

You can view machine status, alarms, axis coordinates, input etc. for a complete diagnostic.

Task list sets the working sequence of the machine, it shows all the automatic and manual production run tasks.

Tulus® Cell

H.M.I. for punching, punching & shearing and punching & laser cutting machines

The tool management contains a tool management view, turret view, and tool library view. The tool management shows all the tools and tool parameters in the Tulus® database.

Synchronization of data on tools and turret between Tulus® and NC Express e³.

Computations of sorting positions after you change the sorting layout manually or edit part data or sorting parameters.

The stacking management automatically calculates the positions of the parts on the pallets. You can edit the sorting layout calculated by the stacking management also manually.

The program also allows you to manage the positioning of worked parts on the unload areas.

Tulus® Bend

H.M.I. for panel benders

Tulus® Bend works by task list; each task manages a part to be bent.

While the operator is making panel bender tooling and parts graphic check, Tulus® Bend guides him in a easy and contextual way by highlighting the buttons or the flow needed. Tulus® Bend shows machine status, alarms, axis coordinates, inputs, etc. for complete diagnostic purposes.

The program automatically compares the tools on board with the configuration set up during machine setup.
It is possible to check the bending parameters and the application of any corrections, and the tooling of the machine and the graphics of the pieces.

**Tulus® Laser**

**H.M.I. for panel benders**

The Task List shows all the automatic and manual production run tasks.

The Equipment status views show the status data of the machines and devices for the operation, tests, and diagnostics of the machine. These views are always specified by your machine assembly.

Working and Loading Areas of Pallet Change are easily and safely managed.

Operator can also check the log event list where all machine operations are listed.

In the Online Corrector view it is possible to change on line technological laser parameters about the current selected laser tool, and Operator, according to assigned rights, can enter the technological laser parameter.

Thanks to new Technology BestPiercing, no more need to choose piercing at Cam level.

Autoadapted process: new algorithms, at Machine control level, work according to Material+Thickness/Profile Dimensions.

A simple and easy page where Utilities Programs already existent can be used and new programs, for Utilities reasons, can be added.

**P30L**

**H.M.I. for 2D and 3D laser machines**

User-friendly touch screen interface to control the setup and calibration of the machine and the laser unit and to manage the laser parameter table. Part program management environment with preview, even in real time.

User accesses are managed with different levels (operator, service etc.).
H.M.I. / Additional tools

Tulus® MUPS

Machine User Personal Assistant

Application for Android devices that can be used as a tool to monitor the current state of the machine remotely and to support machine operations by reducing waiting times.

• Reduces waiting time and improves efficiency. Displays the list of incoming tasks, the remaining time for the next one, and the number of active alarms if present.

• Helps to place tool in correct place. It also acts as a tool management guide (tool information and installation instructions).

• Shows Nest/ part info. Displays information on nesting and individual pieces.

• Remote status monitoring.
**Tulus® Storage**

Control interface with visual and modern look and touch screen, for warehouse management and inventory of raw and processed materials and of the worked pieces.

- **Displayed information:**
  - Alarms and messages
  - Settings
  - Status and task displays of storage and connected machines
  - Storage content view for storage inventory and search functionalities.

**Station control view**

**Tulus® Terminal**

Program that allows the definition of the order of process steps (welding, painting, etc.). Workpiece position information is made available throughout the process.

- Routing is always mandatory for Tulus® Terminal. Part routing gives to the user the possibility to define the order of the process steps (e.g. welding, painting etc.)
- Part position information is known and managed during the whole process
- Up-to-date reporting of the parts made as well as damaged parts

It also provides up-to-date information on the production state of the pieces and allows you to put back in production pieces that may have failed.
Tulus® Power Processing

Tulus® Power Processing allows control of the entire production process from order management, programming, and planning to finished product and reporting. It allows you to know the state of the production and the stage of every single piece, ensuring an improvement in efficiency.
1. Tulus® Power Processing receives the product order automatically (ERP) or this is created manually.

2. Power Processing receives product and component data.


4. Part routing to work steps.

5. Automatic nesting and tooling of different machines.

6. Production orders are transferred to the task list of machines or...

7. Schedule in the machine time calendar.

8. Routing of parts to different work steps.

9. Reporting by work steps.

10. Reporting back to the ERP system.

Tulus® e-Kanban

Android App (Tulus® Power Processing option) that can be used for the piece order process, not just sheet metal. The order can be sent in digital format directly to ERP factory or Tulus® Power Processing. This can be used for all parts ordering process and not only sheet metal parts. Part metadata to determine where the order is placed, how large batch size, storage location, etc.

Tulus® e-Kanban monitors and tells to user if the parts have already been ordered which work step they are going. The benefits are eliminating the use of paper and any duplicate order errors.
ERP connection

Prima Power offers the management of a number of files and reporting interfaces to allow communication between a generic ERP system of the customer and Prima Power’s software products. Connection to ERP systems with Prima Power software interfaces files in various formats (ASCII, XML, csv, html), and the customer is free to choose the one most suitable for him.

The managed files, with read and write specifications that are delivered to the customer are:

- production order import files into CAM
- theoretical production data export files from CAM
- reporting files on the production from all of the group machines (inventory of materials, number of pieces produced, processing time)
- machine status reporting files (operation list and active alarms status)
Production reporting and monitoring

Tulus® Production Reporting

This program shows in real time the machine data and prepares reports on the production. Production data includes the programs, the components, and the materials used.

It manages, views and reports production processes such as inventory of raw material, inventory of processed workpieces, completed production orders and nesting. By monitoring the rate of use of raw material it is possible to reduce the waste; using material reports facilitates spending forecasts and production planning. Generated reports can be printed, shared, or used for returning to ERP in standard HTML, CSV, or XML formats.
Tulus® Performance Reporting

Tulus® Performance Reporting gives a huge amount of information available about machine performance and utilization rate. It creates reports on machine efficiency and utilization and gives accurate information about machine performance.

It allows analyzing where improvement is possible for production planning and where tool maintenance would be helpful.

The machine time report gives detailed information on, for example, what production orders and NC programs are used in the production and what the machine feed rate has been.

Also machine failure and idle times are specified in the reports. Thus no machine idle time remains unexplained. Performance Reporting reports all machine time, including processing, idle and fault times.

Processing time is recorded when the machine is actively running. Idle time is defined as the time when the machine is ready for machining. Faults are automatically recorded and timed by machine status.

The trend report shows values of the full date range selected in graphical format. The run, idle and failure times of the machine are given in cumulative format.

The machine time summary report displays the machine run, idle and failure times graphically on weekly basis.
Remote Care. Revolutionizing remote diagnostics and maintenance

Today, in the age of Industry 4.0 Prima Power offers customers a leading edge technology - Remote Care service. Instead of waiting for the machine unexpected interruption, Remote Care proactively analyzes machine performance, ensures production efficiency, helps to avoid unplanned production stops and saves time in correcting malfunctions. Remote Care is a powerful tool for maximizing uptime and manufacturing efficiency.

Remote Care condition monitoring provides systematic and planned maintenance and speeds up troubleshooting and problem solving. The remote monitoring system collects machine data, records operation history, as well as logs data of component usage and alarms and stores it in Prima Power database.

Collected data is used to produce efficiency reports, containing a breakdown of total idle time and analyses of alarms and machine condition. On request, Prima Power specialists will analyze the material, make a summary and recommend actions for improving overall efficiency of the manufacturing process.

With Remote Care, you have an overview of the current condition of individual machines as well as the production as a whole. Remote Care enables a direct online contact of Prima Power with the customer’s manufacturing technology, providing fast access to machine condition and enabling faster remote service support.
Data security

Prima Power ensures the highest level of data security at three levels that guarantees to the customer that their machine data are always safe.

It's important to state that the Remote Care system will only gather machine data (in order to improve the efficiency of the manufacturing process) and not sensitive information, like production ones.

The three level of data security are:

1. The sending of machine data, gathered thanks to cameras and sensors on the machine, is secured by gateway firewall.

2. The data archive safety on the cloud is guaranteed thanks to the IEC 15408 standar certification. Moreover, the remote connection device is certified according to ISO 27001:2013.

3. Remote Diagnostic access is granted only to selected and authorized people. To ensure data privacy, a data safety agreement is signed between Prima Power and customer. Our personnel will only access to machine data and not sensitive ones (no production data are recorded).
**Tulus® Analytics**

Tulus® Analytics is the new online customer self-service portal that provides the users with detailed information about their production and machines.

The Tulus® dashboard information includes:

- root cause analysis
- machine performance and utilization
- top alarms

Additional information available are the OEE and Maintenance modules (add-ons for an additional fee).

All these information will allow the customers to undertake important actions such as:

- scheduling a service maintenance activity
- scheduling or performing a periodical maintenance check-up
- changing an NC program, tooling
- contacting Prima Power Global Service regarding a service activity or a retrofit solution.

Thanks to information provided by Tulus® Analytics, and the resulting undertaken actions, the customer can achieve important benefits such as an improvement in the overall machine effectiveness (OEE), quality and resource management improvement, downtime reduction and organizational learning.
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 or the software 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.

TELESERVICE
It is a service for the remote diagnostic and assistance. Skilled service engineers are available to operate remotely with the customer’s CNC.

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 thanks to the dedicated software solutions.

UPDATES & UPGRADES
The modularity of the product range often allows upgrading of a machine or manufacturing system even years after the original delivery.

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

TRAINING
Training programs and updates for using our machines and software to their best, maximizing manufacturing capacity and quality.
Contacts

Find your local Prima Power representative at primapower.com