



The Bend
The Combi
The Laser
The Press
The Punch
[The Shear](#)
The System
The Software

The SHEAR

New generation of integrated
punching and shearing technology

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Next level. Integration.

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.

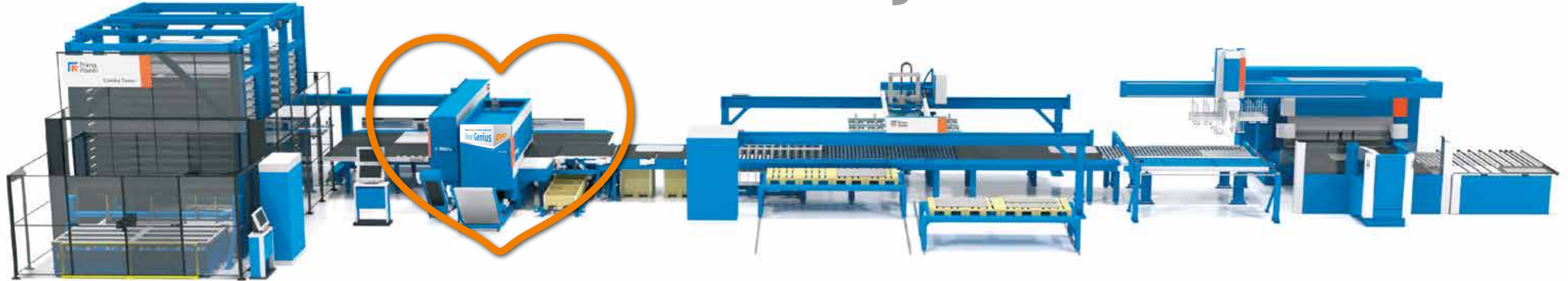
What can be found in this brochure

Fully servo-electric punching and right angle shearing center for specified and multi-purpose productions.

Suite of options designed to achieve the best performance depending on the customer's needs.

Wide range of automation solutions to manage the whole production cycle.

The Heart of the System



The Shear philosophy

The Shear philosophy is to provide one machine capable of transforming parts to final production stages without the need for secondary operations for costly sorting and unloading. The punching and shearing concept saves material, decreases necessary floor space and investment in separate machine tools, tooling and energy.

Today, right angle shear technology is used throughout the industrial world in most varied applications like panels, doors, HVAC, cabinets etc.; in independent production cells, or as central units within automatic material handling systems up to a factory-wide FMS level.

Here are some of the reasons why:

1) AVOID THE COST OF PRE-SHEARING

Pre-shearing is a waste of time and money. Moreover, it is extremely difficult for a stand alone shear to achieve anything like the accuracy of components manufactured by an integrated right angle shear. Shear Genius can be fed with sheets up to 4,300 x 1,500 and direct from a coil line.

2) JUST THE RIGHT EDGE QUALITY

One stroke detaches one or several components. Micro-jointed or nibbled components often require an additional work stage, such as deburring, to improve edge quality. A right angle shear produces sufficiently

high edge quality for practically every purpose. The component is usually ready for the next work stage as it unloads from the machine. For example, there is no oxide layer on the edges to be removed before painting.

3) PRACTICALLY NO CONSUMABLES

As for consumables, Prima Power's right angle shear technology uses only energy and compressed air. The blades have several cutting edges – enough for years of production with an occasional sharpening. Blades, like punching tools, can be sharpened numerous times. The new shear also reduces 75% of the maintenance time.

4) DON'T PAY FOR MATERIAL YOU DON'T NEED

Compared with traditional methods, an integrated right angle shear can significantly save raw material costs with continuous line nesting. The Shear method makes maximum use of material and eliminates micro-jointed parts and further manual operations.

5) AUTOMATED SOLUTION

The modular design of the Shear Genius® allows the addition of loading, unloading, sorting and stacking equipment after the initial installation. The reliability of shearing and automatic component removal are inherent benefits of the right angle shear concept, and make Shear Genius® the optimum machine tool for high-level automation, unmanned operation and PSBB production line.

WHAT DOES GREEN MEAN?

Green means a win-win for you and sustainable development. Sustainability adds to manufacturing efficiency and productivity. Your customers, your employees and the community you operate in demand it more and more. Sustainability & social responsibility are characteristics of a modern company and add to competitiveness. And you make better sheet metal components at lower cost.

green
means®

The PUNCHING & SHEARING technology



82%

Energy saved by our servo-electric punching and shearing with the ECOPUNCH® technology



~13%

Scrap material reduction with our punch-shear technology



Combining two technologies, saving floorspace and increasing output

Over 30 years of experience - Over 3000 applications worldwide

Versatile tooling and features



ACCESSIBLE

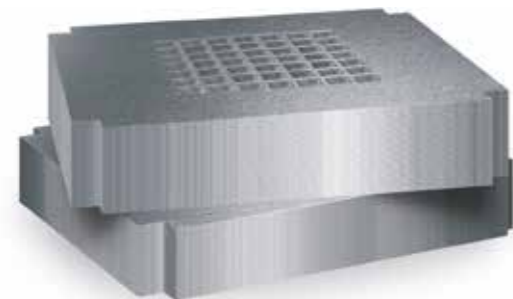
Prima Power punching machines are operated with a modern control unit and its touch screen panel. Management of machine setup and work queues is easy with the Tulus® user interface. The NC Express™ programming system and Tulus® work in perfect combination, provide comprehensive reports on machine and production status, and can be linked to the factory ERP system when required. Special attention has been paid to ergonomics and user friendliness of the control unit.

Manual loading and unloading is facilitated by a fixed or a movable table top. The movable table top can be locked in different positions. Thus even the smallest sheets can be handled close to the operator. The loading of heavy sheets is made easy with vertically moving sheet supports. Machine tables have been re-designed and equipped with more dense brushes, which together with the more solid table frame enable handling of sheets up to 250 kg. Clamp position is programmable for maximum sheet utilization and the position is changed automatically with the PCS function. Both Genius and Brilliance series machines are equipped with four clamps, which can be moved automatically and individually to a new position during program run to maximize sheet utilization without repositioning.

FORMING, TAPPING, MARKING – MORE VALUE TO PARTS

Prima Power's servo-electric Ecopunch® technology offers several highly productive tools in a single machine.

Watch the video on roll forming



Automatic tapping can be achieved with Multithread tapping tool.

Watch the video on Multithread tapping



Prima Power options include part tracing systems from labelling to laser marking.

Watch the video on laser marking



FAST AUTO INDEX

A large number of index tools facilitates set-ups and programming, shortens tool change times and increases production speed. Maximum index rotation speed is 250 rpm. The rotation mechanism of the punch and die is mechanically engaged and disengaged vertically. It enables full tonnage and punching speeds to be used in any station, with any tool size.



INTELLIGENT RAM

Intelligent ram shortens tool change time and increases the number of tools in turret and especially that of index tools. Intelligent ram includes a rotating ram head, which enables old Multi-Tool® types to be used as indexable.

Up to 300 kN servo-electric punching force can be selected for the ram. Automatic overload protection and central lubrication ensure dependable machine operation.

Watch the video on Intelligent ram



SCRATCH FREE

A new feature is having moving brushes also in front and inside of the turret, which prevents effectively the scratching of sensitive materials. The movement is activated by the program when needed.

Further options include the servo-operated tapping unit TU6, automatic labelling device and Inkjet marking device.

The high-precision, servo-electric, indexable upforming cylinder provides 200 kN of forming power for fast making of even high and complicated forms and continuous roll forming.



SHEET POSITIONING

The machine features an axis actuation system based on maintenance free AC-servo motors. The construction allows positioning speeds up to 150 m/min; acceleration of the axes is adaptive and accuracy excellent.

AUTOMATIC CLAMP SETTING AND MOVING

The Programmable Clamp Setting function automatically positions sheet clamps according to numerical program, minimizing clamp dead zones. When changing production from full size to small sheets, clamp settings can be made automatically without wasting operator time.



The intelligent right angle shear

The Prima Power right angle shear is extremely fast in operation. Programmable blade height and automatic stroke depth adjustment optimize shearing. Blade speed is automatically selected for the maximum speed. Together with automatic shearing modes this optimizes operation speed.

The intelligent right angle shear always allows using of the optimum solution for the stroke according to the part size to be made in each case.

The longest shearing blades in the world (1000 x 1500 mm) for fast and reliable part release to bending process. The shearing process is the most reliable method for part separation from the sheet. When blades are down, it is 100% sure that part is released with high quality, making this technology a key factor for unmanned production.

The right angle shear can be used for 0.5...4 mm mild steel (aluminium up to 5 mm). For stainless steel max. thickness is 3 mm.

Programmable sheet holder

The lateral forces caused by the shearing action are compensated using pneumatic sheet holders for excellent shearing quality and high tolerances. In the right angle shear, sheet holders are programmable, allowing shearing close to forms.

Automatic blade clearance setting

Blade clearance adjustment is automatic. Machine control calculates the optimum blade clearance for materials of different thickness and the adjustment unit in the right angle shear automatically sets the correct clearance. This prolongs blade life and ensures high-quality and burr-free parts.

Outstanding accuracy

As the right angle shear is an integral part of the cell and not a separate machine, and since the sheet is firmly held throughout the fabrication process, high component accuracy is achieved.

Shear Genius® accuracy reaches new levels through a new actuation mechanism for X and Y movement of the coordinate table. All machines are carefully tested before delivery.

Support of large work pieces

When shearing large pieces an automatic lifting mechanism integrated in the conveyor holds the parts for high accuracy.

Intelligent part sorting

The new shear has a unique system to sort parts and scrap. If there are any trims or leftover on the sheet, it is sorted out through the shear frame and conveyor. Inside the shear a fast inverter driven conveyor system separates scrap and moves the parts to sorting or stacking without any delay or waiting time. For scrap part sorting a metallic conveyor belt is now available as standard and a lifting conveyor as an option. Improved sorting conveyors having new inverter technology for faster sorting of components. There is always one sorting address included for sheared parts under the table.



Long blade life time, engineer-friendly setup

Shear blades are hardened tool steel with very long life time combined with automatic clearance setting. However, blades can be turned and reused since they have more than one cutting edge each. When all corners are used, blades can be sharpened and reused. With the new intelligent shear, blade maintenance time is 75 % shorter due to new shear construction and new remote control box for service engineer tests and adjustments.



Machine shown here is equipped with automation and other options



ACCESSIBLE

Easy to use and monitor.



INTELLIGENT RAM

More tools in turret and shorter tool change times



SCRATCH FREE

Vertically moving brushes prevent the scratching of sensitive materials.



MODULAR TECHNOLOGY

Manufacturing cell can be equipped with automation solutions to achieve unattended production.

Servo-electric Shear Genius® EVO

Highest productivity with integrated punching and shearing

The core element of the machine remains its servo-electric technology, allowing sustainable manufacturing with reduced energy consumption, raw material savings and no oil waste. Shear Genius EVO consists of a servo-electric turret punch press with integrated right angle shear and an automatic loading equipment.

Shear Genius EVO can be easily connected to automation systems in order to automatise the material and part flow and further increase the output.

HIGHLIGHTS

- New material loading solution with sheet edge measurement
- Smart nesting
- Trim strip destroyer to speed up the continuous production
- Fast sheet loading time and efficient production process time

Compared to the previous model, the Shear Genius EVO achieves significantly lower cost per part and higher output respecting the means of sustainable fabrication.

Blanking process is the same as before (punch & shear) but part nesting to the raw material sheet is new. Due to the sheet edge measurement parts can be nested using sheet edges as well and scrap is minimized, sheet utilization is increased and process time significantly decreased.

If the parts are not filling up the sheet completely, the last part in the clamps can be removed from the table just as fast as a blink of an eye and it is not needed to handle with any sorting device and generate waiting times. This means that the next sheet loading time is extremely short and production process time is increased. Both increase production capacity on PSBB lines and with big panels etc. With door leafs and elevator panels, the production time is almost cut to half (double productivity).

Lowest cost per part

Highest output

Sustainable fabrication

SERVO-ELECTRIC SHEAR GENIUS® EVO BENEFITS:

- Fast setup with up to 400 tools in a turret
- 300 kN (33 US ton) force for demanding products
- Average power consumption 6 kVA / 5 kW
- Power supply connection 17 kVA (3 x 25 A fuse / 400V)
- Low energy consumption in three power modes: run / stand by / idle
- Low maintenance cost
- High versatility
- High performance values
- Automated flexible fabrication
- No skeletons, less punching scrap = savings in raw material
- No nibble marks
- Fast loading cycle with new loading device LD
- Accurate pre-cut raw material loading
- Higher productivity
- Reduced manufacturing costs
- Faster return on investment
- Wide range of options, can also be installed later as machine upgrades

= Very high productivity in most varied applications

Two models for standard size sheets (max.)

SG 1530: 3,074 mm x 1,565 mm (120" x 60")
SG 1540: 4,300 mm x 1,565 mm (170" x 60")

TWO PERFORMANCE LEVELS



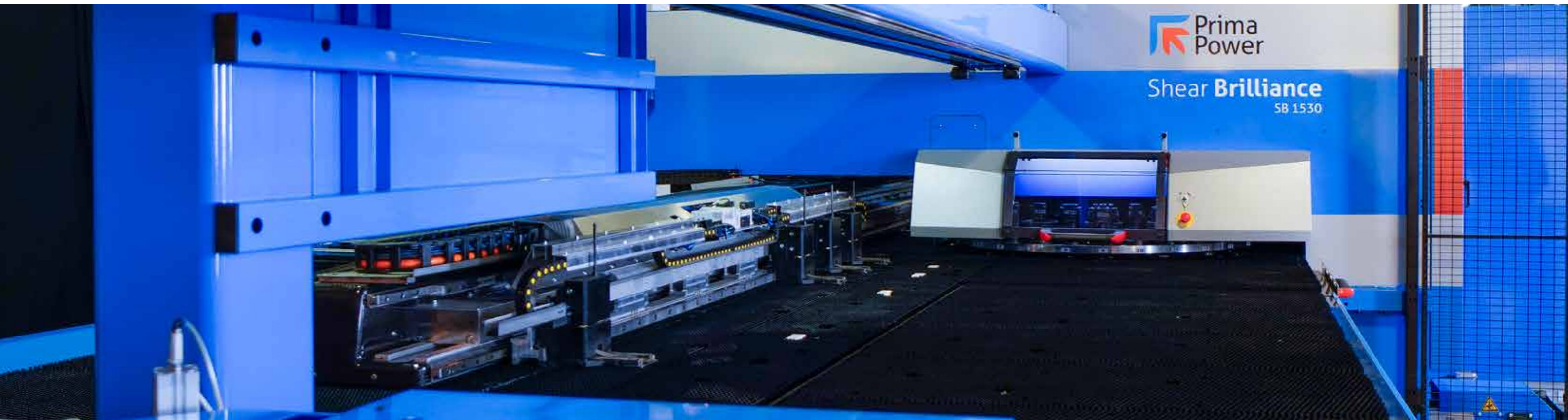
PURE

meets all the targets set for an attractively priced, yet efficient production machine



DYNAMIC

offers the best productivity and performance in the market



Shear Brilliance®

Outstanding productivity

Prima Power Shear Brilliance is based on the very latest in composite materials, servo-electric technology and linear drives to achieve truly impressive performance values which translate into a new level of productivity in versatile, flexible fabrication.

PROCESS BENEFITS:

- Automated flexible fabrication
 - less manual labour, higher throughput
- Savings in raw material
 - no skeletons, less punching scrap
- Higher nesting utilization
 - more parts in one sheet
- High quality
 - no nibble marks in part edges
- Fast, accurate and reliable shearing and part exit
 - less labour, better part quality

SHEAR BRILLIANCE – A NEW GENERATION OF ADVANCED FABRICATION TECHNOLOGY

The vast majority of all sheet metal components fabricated are rectangular, so a highly economical method to produce them is to perform first punching and then

shear the components loose in the same automatic process with an integrated right angle shear. Also, parts with three or two straight edges are perfect for fabrication with a right angle shear.



SHEAR BRILLIANCE HIGHLIGHTS:

- Loading in hidden time
 - more production time available
- Hit speeds up to 1,300 hpm
 - fastest hit rate available for fabricating full format sheets
- 3,100 mm common working area
 - punching and shearing without repositioning

- High tooling capacity
 - huge savings in set-up times, flexibility in production
- Supreme positioning speed, accuracy and precision
 - Time savings and improved quality during processing

Fully servo-electric Shear Brilliance features linear drive technology in sheet positioning and raises manufacturing speed and productivity up to a new level. With long travel (X = 5,040 mm, Y = 1,640 mm) of the coordinate table full working area can be used without repositioning, accurately and at great speed. The sheets are pre-positioned during machine operation, which reduces loading time dramatically.

Other inherent benefits of modern servo-electric technology are operation economy due to low power consumption

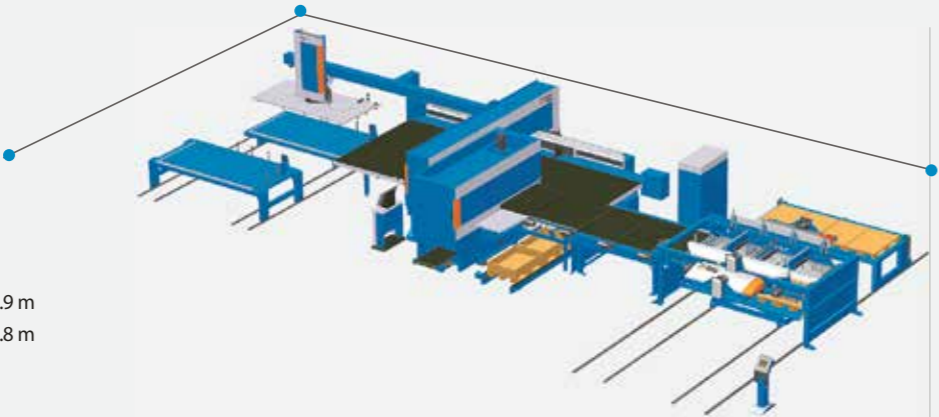
and low maintenance requirement, as well as excellent accuracy in all the versatile capabilities. Prima Power modularity allows the fast high-precision manufacturing of components that require also forming – even bending – tapping and marking in a single, flexible cell and a fully automatic process. Finally, by its very nature, the integrated punching-shearing concept can bring savings 10 % to 20 % in raw material consumption. Even more saving can be achieved using optional cut-to-length line.



Some of the illustrations show equipment without safety devices and some with optional equipment

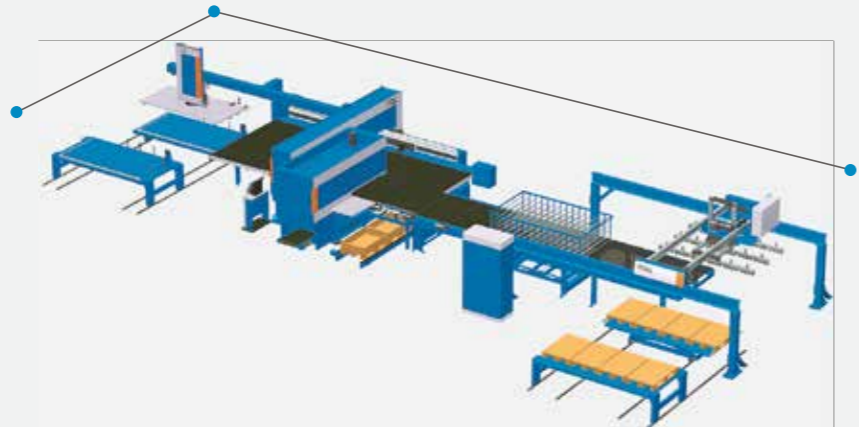
Shear Genius® EVO technical specifications

Approximate main dimensions without safety systems



Shear Genius EVO with STS

SG EVO 1530: Y 7.8 m, X 18.9 m
SG EVO 1540: Y 7.8 m, X 22.8 m



Shear Genius EVO with PSR

SG EVO 1530: Y 9.2 m, X 14.6 m
SG EVO 1540: Y 9.2 m, X 18.5 m

Model	Max. sheet size	X movement	Table height
SG EVO 1530	3,000 mm x 1,500 mm	3,000 mm	1,100 mm
SG EVO 1540	4,300 mm x 1,500 mm; with repositioning	3,000 mm	1,100 mm

Performance level	SG EVO Pure	SG EVO Dynamic
Punching force, kN	230	300
Punching speed, 1/min	700	1.000
Axis positioning speed, m/min	127	150
Index rotation speed, r/min	180	250
Max no of tools / index tools	16 hole turret 384/384, 20 hole turret 400/240	
Max. sheet thickness, punching, mm	8	
Max. sheet thickness, shearing, mm	Al 5, Mild steel 4, Stainless steel 3	
Max. sheet weight, kg	250	
Average power consumption, kW	5	

Shear Brilliance® technical specifications



Shear Brilliance	Max. sheet size	X movement	Y movement
SB 1530	3,100 mm x 1,565 mm	5,040 mm	1,640 mm
SB 1540	4,300 mm x 1,565 mm	"	"

Axis positioning speed max., m/min	210
Max. sheet weight, kg	250
Servo-electric punching and shearing cell	

Max no of tools / index tools	24 hole turret 576/576, 30 hole turret 600/360		
Max. sheet thickness, mm	Al	MS	SS
punching	8	8	8
shearing	5	4	3
Max. hit speed per minute	1 mm	25 mm	250 mm
	1,300	580	235

Around-the-clock production

Prima Power machines are highly reliable and are used worldwide in the harshest production environments and for the most demanding manufacturing schedules. This makes them particularly suitable for 24/7 operation.



Modular automation

The flexible and modular Prima Power range of automation ensures the optimal way of material handling for extensive unmanned operation and thus lower production cost. The Shear machines are compatible with the whole range of optional material handling equipment for fast raw material feeding, sorting and stacking. Due to the wide range and modularity, the optimum solution can be found for every application and all system sizes.

Automated part handling

SHEAR GENIUS EVO WITH STACKING SYSTEM STS

Stacking solution with fast stacking address change based on guided free fall part stacking.

- Guided free fall stacking
- Fast stacking and address change
- Up to two stacking wagons
- Multiple stacking addresses

SHEAR GENIUS EVO WITH PICKING AND STACKING ROBOT PSR

Stacking solution with high flexibility based on accurate and gentle part stacking by gripper.

- Accurate and gentle stacking by gripper
- Scratch free
- Large stacking area up to four wagons and two stacking tables same time at the
- Connection to panel bender

Shear Genius EVO as a part of automated manufacturing line

PSBB WITH PART CENTRING DEVICE PCD

Compact PSBB manufacturing line for fully automatic manufacturing process dedicated for panel production and door manufacturing.

- Part buffering to conveyors
- Part stacking
- External part feed to bending
- Part turning before bending

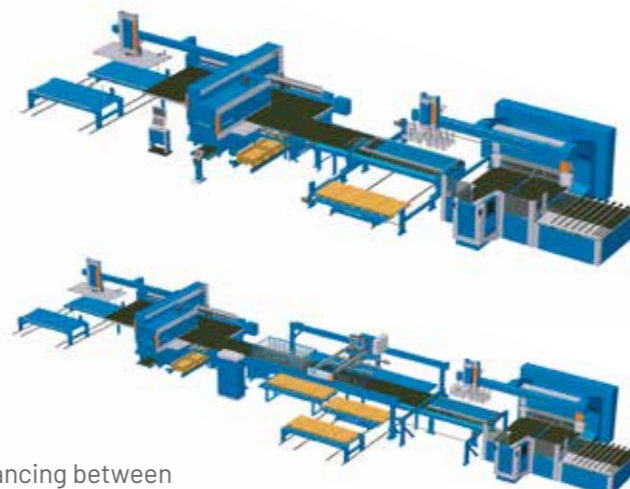
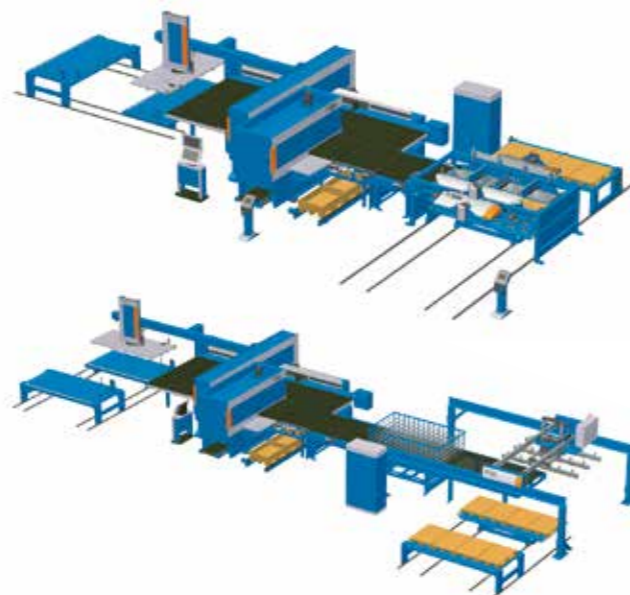
PSBB WITH PSR

PSBB manufacturing line with high flexibility and large capacity of buffering and stacking components between punching/shearing and bending process.

- Large stacking capacity
- External feed of bent parts
- Part turning before bending
- (buffering) Balancing between punching/shearing and bending process
- Re-organization of part flow before bending

Punch & Shear technology can automate

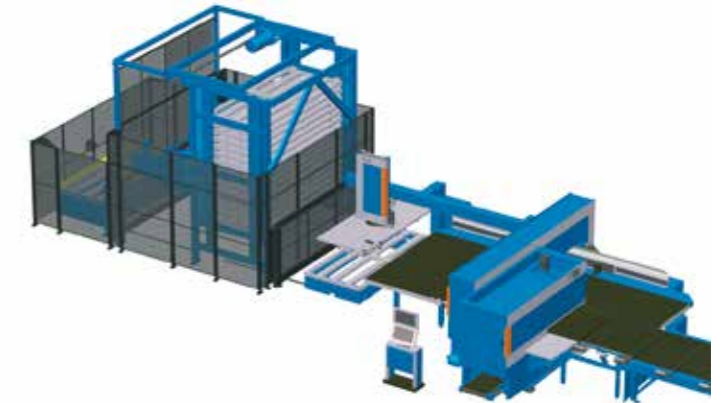
- Fast raw material availability
- Raw material change in hidden time during machine operation
- Sorting and stacking of components
- Exit of components without interrupting machine operation
- Integration to next process steps such a bendings
- Storage connections



Automated manufacturing lines with storage solutions

COMBO TOWER WITH 90 DEGREE CONNECTION BY USING ROTATING GRIPPER OF LOADING DEVICE LD

Combo Tower is a compact material storage enabling the availability of different materials whenever needed automatically and without delays. The rotating gripper option of loading device LD enables a more flexible placement of manufacturing lines to customer premises as required by production logistics.



CUT-TO-LENGTH LINE AND FL STORAGE INTEGRATION

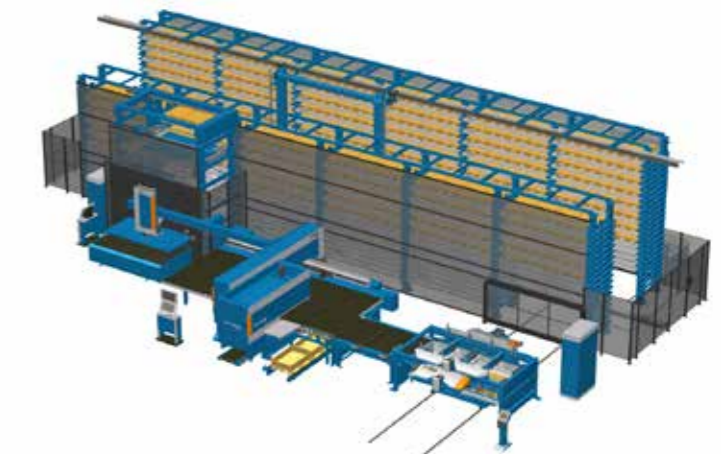
FL storage is a process efficient solution when fast material changes are required due to production requirements. FL storage can deliver material to machine cell in hidden time.

With cut to length line integration remarkable savings in material usage can be achieved and machine utilization can be increased. Cut-to-length line can be used to feed material to the FL storage.

NIGHT TRAIN FMS® WITH FAST LOADING DEVICE FLD

Night Train FMS® is a comprehensive solution for a sheet metal working factory designed for automated operation, where the main equipment is an automatic logistic centre. It can serve as material storage and as buffer storage for punched/sheared and laser-cut parts. Automatic storage enables long unmanned production times.

When fast material changes are required to machine cells, Fast loading device FLD can be placed between NightTrain FMS and machine cell. FLD picks up material directly from the cassettes on shelving unit and brings it to machine cell in hidden time without delays.



Smart software

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 mobile devices.

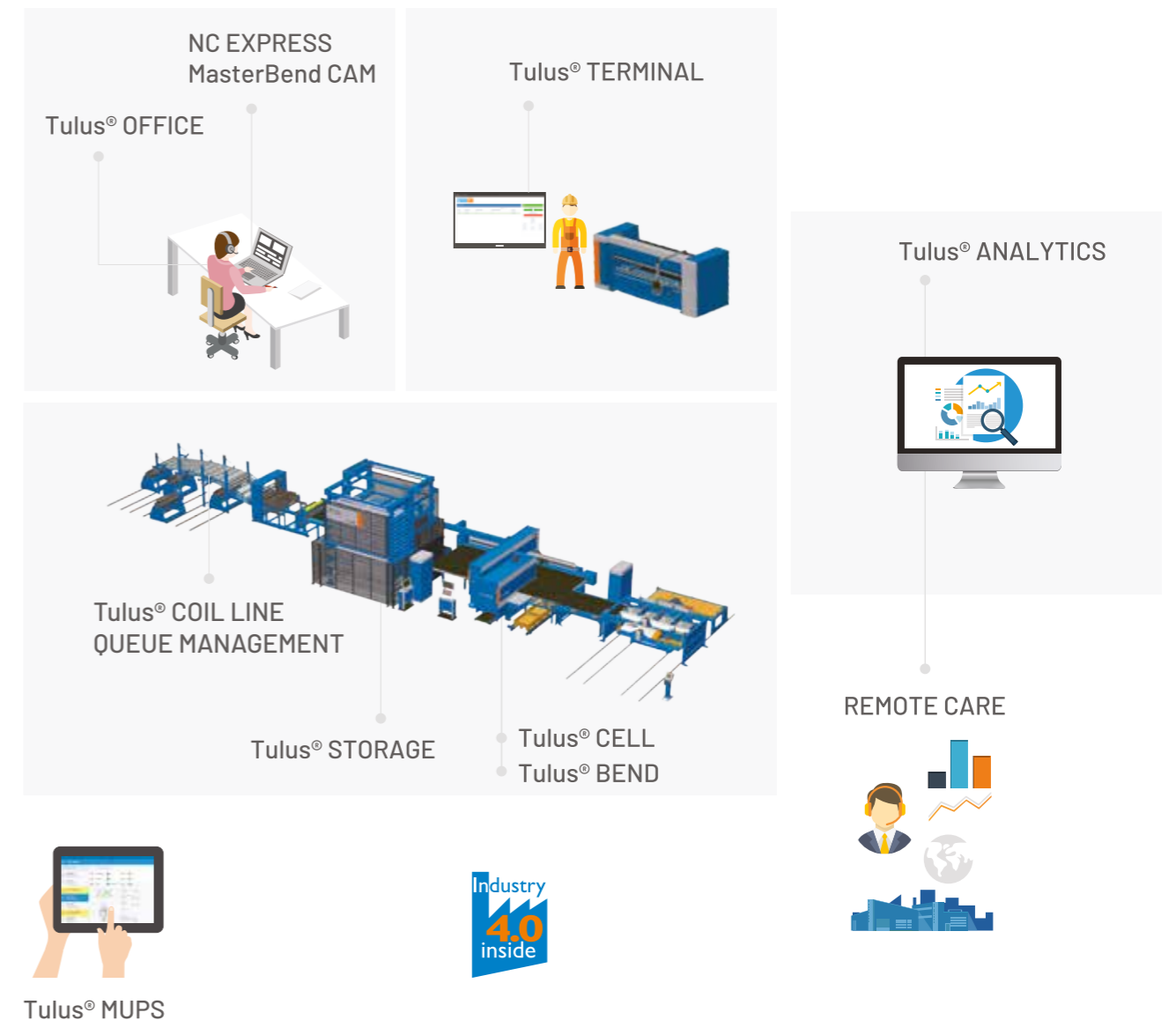


INDUSTRY 4.0

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, Smart Software and Smart Remote Care.

Prima Power Software family



Tulus® Coil line queue management: User interface for coil line connected to the system

Tulus® Cell: User interface for punching and laser cutting machines

Tulus® MUPS: Mobile tool for the operator to monitor machine operation remotely

Tulus® Bend: User interface for panel bender

Tulus® Terminal: Web-based user interface for managing manual work phases

Tulus® Storage: User interface for FMS storage

Tulus® Analytics: Web-based tool for machine time monitoring

Tulus® Office: Software for production and production load monitoring with a connection to enterprise resource planning system (ERP)

NC Express: Programming of punching and laser cutting machines

MasterBend CAM: Programming of bending machines

Prima Power Services: key to better productivity

We believe in long-term relationships 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 14,000 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



primapower.com

