PX

The next best compact panel bender

salvagnini

The next best compact panel bender.

PRODUCTIVITY

How to combine productivity and flexibility?

Conventional bending is characterized by an average OEE of 30%, and flexibility depends on the tool change system, which is often costly and time-consuming, with lower dynamics compared to panel benders, or on the installation of more than one press brake. The PX, on the other hand, natively combines productivity, with its automatic bending and handling cycles, and flexibility, with its universal bending tools.

How long does re-tooling take?

The PX doesn’t require re-tooling: the upper and lower blades, the counterblade and the blankholder are universal tools that are able to process the whole range of thicknesses and machinable materials.

Do manual loading and unloading affect the total cycle time?

Loading and unloading are performed by the operator, who positions the sheet metal on the worktable and collects the product after bending. The PX's cycle minimizes the impact of these activities on total cycle time, as it allows the product to be unloaded after positioning the sheet on the worktable, thus combining two operations in a single action.

Does the PX’s set-up affect productivity?

The set-up has minimal impact on the panel bender's productivity: when the program is loaded, the blankholder automatically adapts in masked time, and the manipulator gets into position for gripping and handling the sheet.

How to produce in kits or batch-one?

The PX is equipped with an automatic ABA blankholder, which adapts the length of the tool according to the size of the part to be produced, in-cycle, without machine down times or manual re-tooling: the ideal solution for batch-one and kit production.

The PX natively combines **productivity**, with its automatic bending and handling cycles, and **flexibility**, with its universal bending tools.

Intelligent system, constant quality.

PRECISION

How to achieve maximum precision?

The sheet metal is centered, just once at the start of the process, against controlled reference stops: this minimizes the cycle time as well as any precision errors, which are all absorbed by the first bend.
The bending formula automatically optimizes the bending parameters to reduce waste, while MAC2.0 detects and automatically compensates any variability in the material to guarantee precise, high-quality bends, reducing set-up times.

ADAPTIVITY

How to make production independent of changes in material?

MAC 2.0 is the set of integrated technologies – sensors, formulas and algorithms – that make the panel bender intelligent: it eliminates waste and reduces corrections, measuring in-cycle and automatically compensating any variability in the material being machined.

How to make the process reactive to changes in the production lists?

The PX can be equipped with proprietary OPS software, which ensures communication between the panel bender and the factory ERP:
depending on needs, OPS manages the production of sequences of different parts. Universal bending tools, automatic in-cycle set-up and automatic handling allow the system to respond to any requests immediately.

No-compromise panel bending performance.

Intelligent configurability
The PX natively includes the **CI interface**, for integrating a **loading/unloading robot** on the left-hand side of the machine. To set it up, remove the side wall facing the robot by hand and then install it in the opposite wall for safety reasons.

Flexible automation
It uses **universal bending tools** which automatically adapt in-cycle to the panel geometry, without machine down times or manual re-tooling, allowing **batch-one or kit productions.**

Connectivity 4.0
The proprietary **LINKS**, **STREAM** and **OPS** softwares establish communication between the system and the company departments involved in the production flow.

Adaptive system
The integrated adaptive technologies (bending formula, MAC 2.0) make the system intelligent and able to **automatically adapt** to changes in the material and the external environment, **eliminating waste and corrections,** and extending the range of products that can be made.

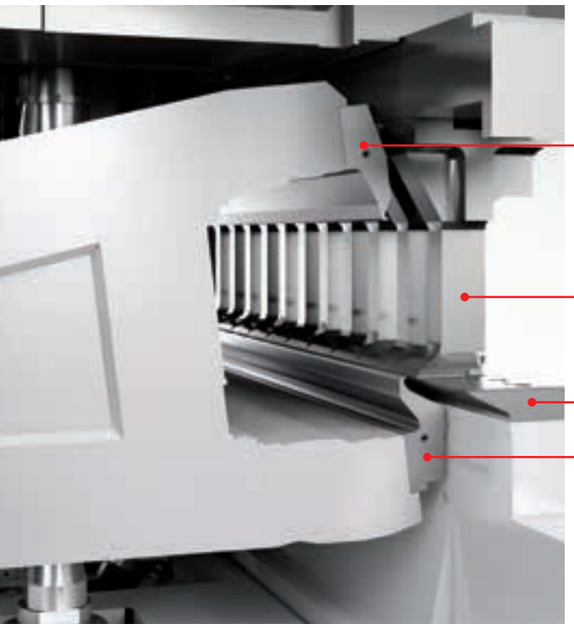
Safe technology
The panel bender is **CE marked**, to guarantee **maximum safety** for the operator.
The loading and unloading operations are controlled by optical light barriers, which stop the cycle if necessary.

Salvagnini is panel bending, panel bending is Salvagnini.

Over **3,600 installations in 76 countries, the world's largest panel bender manufacturing plant** and **over 40 years of experience** and competence speak for themselves: Salvagnini is an authority on "panel bending 4.0", a flexible process the likes of which has never been seen before, whose application boudaries are extended to sectors and environments that have always been considered poorly suited to this technology. There are four PX models to choose from, for bends up to 2500 mm in length and 203 mm in height.

Flexible automation.

Upper and lower blade, counterblade and blankholder are the **four universal tools** used to process the whole range of thicknesses and machinable materials, from 0.4 to 3.2 mm, during the cycle and without machine down times or manual re-tooling.



The **upper and lower blades (A, D)** are the two tools featuring interpolated controlled movement and responsible for bending.

The **automatic ABA blankholder (B)** works simultaneously with the blades and counterblade to bend and clamp the sheet accurately and effectively. It adapts the tool length according to the size of the part being produced during the cycle, without machine down times or manual re-tooling.
The tool profile allows inward bends up to 45 mm.

The **counterblade (C)** helps clamp the sheet during the cycle.

Automatic manipulator: fast and accurate.

Quickly and fully automatically, this moves, handles, grips and rotates the sheet metal throughout the whole machining cycle. It requires no manual interventions during the cycle. **The operator positions the sheet metal on the worktable** and collects the product after bending, performing only the loading and unloading operations.

Operating mode: simple, quick and lean.

Bending on each side of the sheet is achieved thanks to the **controlled interpolated** movements of the blades.

Down bend
NEGATIVE

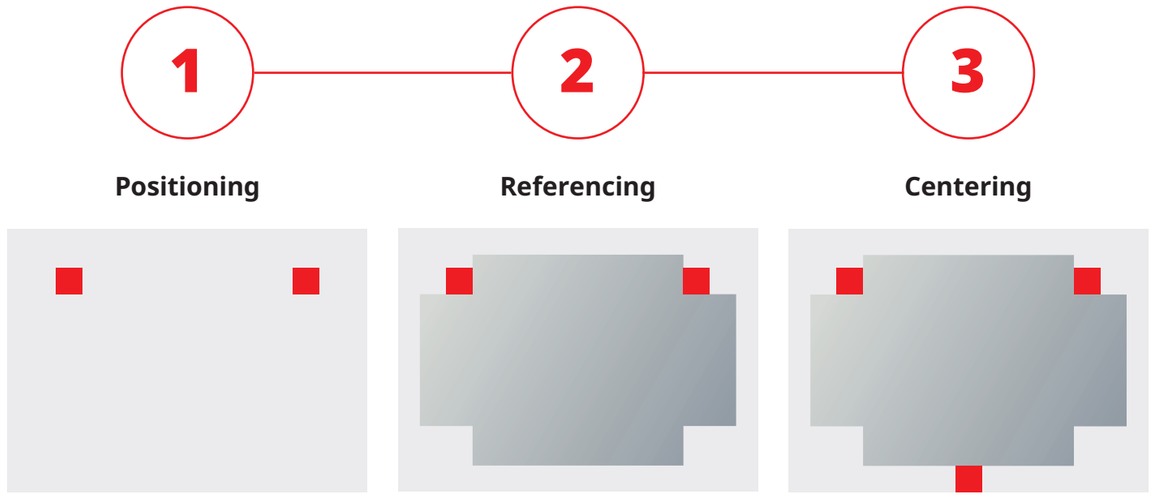
Up bend
POSITIVE

Flattened bend
WITH BLADE

Adaptive system.

One single and controlled centering process
The sheet metal is centered, just once at the start of the process, against controlled mechanical stops: the cycle time is minimized and any precision errors are all absorbed by the first bend.

The mechanical stops are a further guarantee of finished panels of the correct size, every time.



Proprietary bending formula

Developed over the years, the bending formula defines the force and manages the movements of the universal tools, analyzing different parameters in real time, including deflections, temperature and thickness, guaranteeing the precision, repeatability and quality of the finished product.

MAC2.0

MAC 2.0 is the set of technologies that measure all possible variations compared to the nominal value of the mechanical characteristics of the material, compensating where required and adapting the movements of the bending unit during the cycle.

This translates into constant part quality, whatever the variability of the material being machined, eliminating waste and optimizing production times to ensure full productivity. Moreover, by guaranteeing precise bends whatever the material, MAC2.0 helps to reduce the cost per part.

Sustainable technology.

Direct drives

The PX panel bender adopts only electric actuators, thus removing the hydraulics. Bending cylinders are driven by brushless motors, which has great advantages in terms of the reduced wear and deterioration of components that, unlike in other similar technologies, are no longer subjected to continuous extreme stress over and over on the same point. Average in-cycle consumption does not exceed 5 kW.

Production versatility.

Custom solutions to widen versatility.

CLA tools: auxiliary blades, modular in length, available in a positive version, for making upward tabs. They engage and disengage between the sheet metal and the blades, quickly and automatically, to make bends that are shorter than the whole sheet length. The auxiliary blades are set-up manually.

Advanced programming.

STREAM

STREAM is Salvagnini's answer to the modern industrial context, a programming suite that improves reactivity and reduces costs, operating errors and process inefficiencies.

Industry has changed: flexibility and efficiency are fundamental requirements for managing increasingly smaller batches or rapid part code turnover. STREAM is Salvagnini's answer to the modern industrial context, a programming suite that improves reactivity and reduces costs, operating errors and process inefficiencies. STREAM is the integrated environment for managing all activities in the office and on the factory floor, the only point of access for all technologies, from cutting to bending, meeting all planning, programming, production, management, control and optimization needs throughout the production process. Moreover STREAM can be used to calculate costs, including upstream and downstream processes where necessary.
It is structured on three levels: technical, productive and business.

STREAMBEND.EDIT

STREAMBEND.EDIT is the software for developing panel bending programs, including multiple parts:
- in automatic mode, it develops pro-grams independently, starting from a 3D model;
- in interactive mode, it is used for gen-eration/editing/completion operations.

It includes a simulator that can assess the results obtained on the machine.

PARTS

PARTS is the software used to manage the whole database of products and parts:
- it classifies the elements according to common or customized categories;
- it defines the production flows for each part to be machined;
- it generates the relative programs.

VALUES

VALUES is the software which provides an accurate estimation of production costs. It allows calculation not only on the basis of the individual technology, but also over the entire process, including upstream and downstream machining where necessary.

Connectivity 4.0

The Salvagnini-patented LINKS and OPS software allows two-way online communication between machine, office and customer ERP.

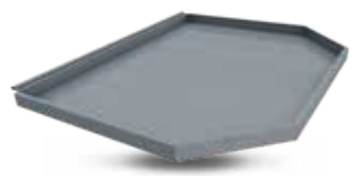
Salvagnini's IoT solution, **increases the global efficiency** of the panel bender. LINKS allows real-time monitoring of the **machine's performance** and independent analysis.

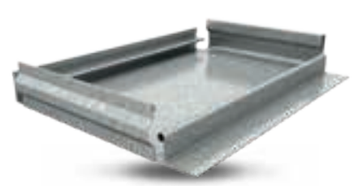
Is the modular software which optimizes the entire **production process** and which allows it to be controlled through interaction with the **ERP/MRP** inside and outside the factory.

Cutting-edge technology.

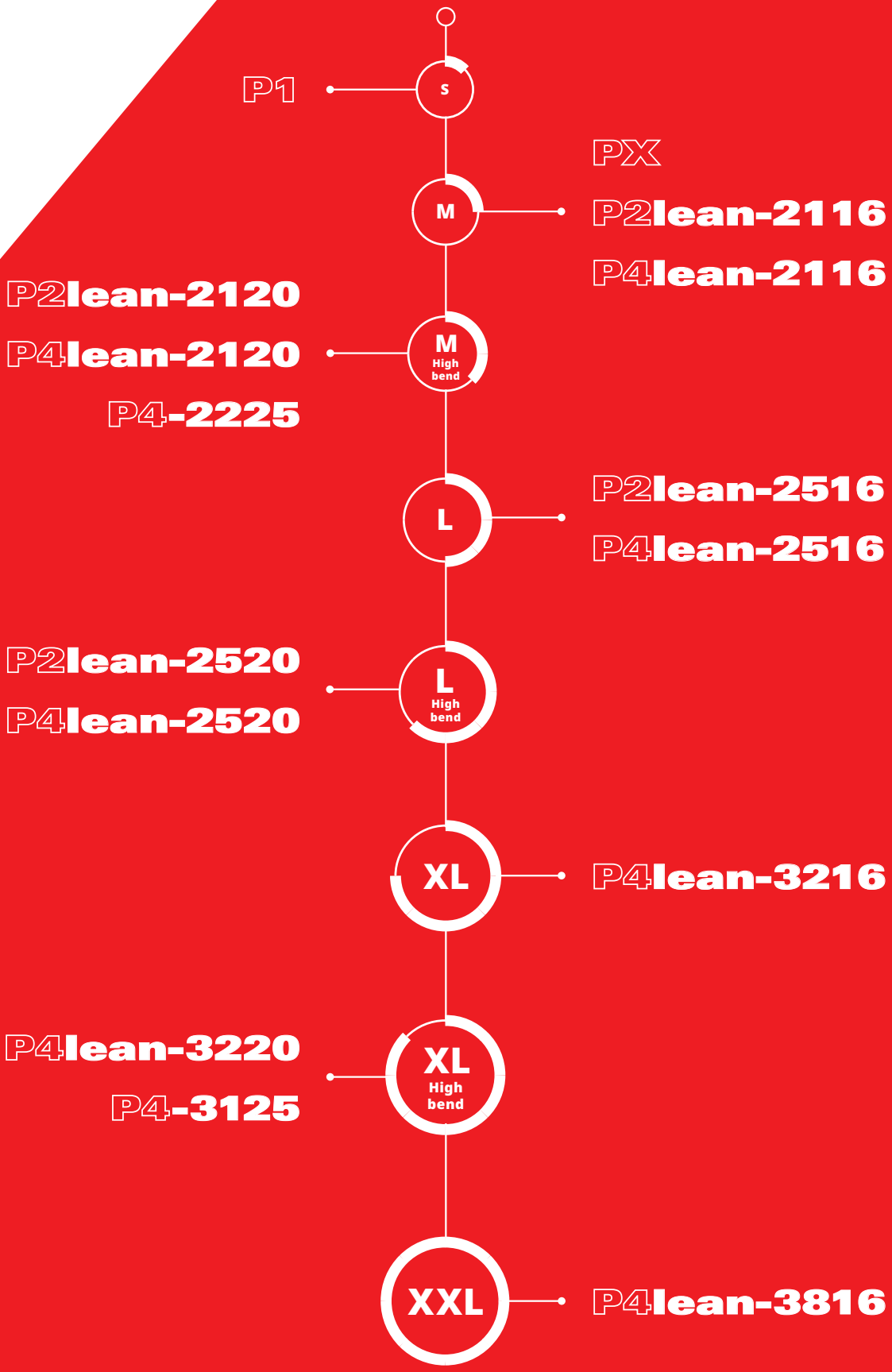
TECHNICAL SPECIFICATIONS	
Maximum length of incoming sheet (mm)	2495
Maximum width of incoming sheet (mm)	1600
Maximum diagonal that can be rotated (mm)	2500
Maximum bending length (mm)	2180
Maximum bending height (mm)	165
Maximum bending force (kN)	330
Maximum clamping force (kN)	530
Minimum thickness (mm)	0.4
Maximum thickness and bending angle steel, UTS 410 N/mm² (mm)	2.5 (±90°) 1.6 (±120°) 1.25 (±125°)
Maximum thickness and bending angle stainless steel, UTS 660 N/mm² (mm)	2.1 (±90°) 1.25 (±120°) 1 (±125°)
Maximum thickness and bending angle aluminium, UTS 265 N/mm² (mm)	3.5 (±90°) 2.5 (±120°) 2.1 (±125°)
Average consumption (kW)	5
Noise level (Machine Directive 2006/42/EC) (dB)	70

Values refer to a standard machine. Salvagnini reserves the right to modify this data without prior notice.





salvagnini



3962021451 UK METRIC 2019