HIGHLIGHTS

Flexible solutions for Industry 4.0

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P1

Electric panel bender for versatile production.

- Bends a wide range of parts, thanks to its patented kinematics.
- Automatically adapts to changes in material and the external environment, thanks to MAC3.0 technology.
- Produces kits or single batches continuously, when equipped with the ABA automatic blankholder tool.
- Requires operator intervention only for loading and unloading.
- Ready to be connected with Salvagnini's IoT solution, LINKS.
- Ideal for Industry 4.0 cells and automation, thanks to the OPS software.

Reduced cycle times and no re-tooling, whatever the geometry of the parts to be machined. For consistently competitive performance.

MACHINE DATA	P1
Maximum bending length (in)	49.2
Maximum bending height (in)	5
Minimum thickness (in)	0.016

MACHINE DATA	P1
Maximum thickness and bending angle psi:	
Steel, UTS 59 ksi	0.063 (±90°)
Stainless steel, UTS 96 ksi	0.051 (±90°)
Aluminium, UTS 38 ksi	0.063 (±90°)
Average consumption (kW)	3.0

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P2

Compact panel bender for lean, flexible production.

- Available in 2 models, to produce parts ranging from 82.6'' to 98.4'' in length and from 6.5'' to 8'' in height.
- Can handle both kit and batch-one production thanks to the universal tool that automatically adapts in-cycle.
- Guarantees power consumption below 4 kW (P2-21xx) thanks to electric actuators.
- Operator intervention is required only for loading and unloading.
- Automatically adapts to changes in material and the external environment, thanks to MAC3.0 technology.
- Ideal for loading/unloading solutions that are robotized or differentiated with an additional port.
- Ready to be connected with Salvagnini's IoT solution, LINKS.
- Ideal for Industry 4.0 cells and automation, thanks to the OPS software.

MACHINE DATA	P2-2120	P2-2225	P2-2520
Maximum bending length (in)	85.83	86.61	98.42
Maximum bending height (in)	8	10	8
Minimum thickness (in)	0.020	0.020	0.020
Maximum thickness and bending angle psi:			
Steel, UTS 59 ksi	0.126 (±90°)	0.126 (±90°)	0.126 (±90°)
Stainless steel, UTS 96 ksi	0.098 (±90°)	0.098 (±90°)	0.098 (±90°)
Aluminium, UTS 38 ksi	0.157 (±120°)	0.157 (±120°)	0.157 (±120°)
Average consumption (kW)	3.0	4.0	5.0
Noise level (Machine Directive 2006/42/EC) (dB)	68	68	69

Three P2 models to choose from, for bends up to 98.43” in length and 10” in height.

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P4

Automatic panel bender for versatile production.

- Available in 6 models, to produce panels ranging from 98.4'' to 157.5'' in length and from 6.5'' to 10'' in height, with thicknesses of between from 0.020 to 0.126 inch (steel).
- Works with universal tools that require no retooling.
- Can handle both kit and batch-one production thanks to the universal tool that automatically adapts in-cycle.
- Can be integrated with manual or robotized unloading devices.
- Automatically adapts to changes in material and the external environment, thanks to proprietary MAC3.0 technology.
- Can be integrated with different semi-automatic, automatic or robotized feeding devices.
- Guarantees maximum operator safety, as handling and bending are completely automatic.
- Ideal in FMS S4+P4 lines or in AJS integrated factory systems.

MACHINE DATA	P4-2120	P4-2225	P4-2520	P4-3125
Maximum bending length (in)	85.8	86.6	98.4	122
Maximum bending height (in)	8	10	8	10
Minimum thickness (in)	0.020	0.020	0.020	0.020
Maximum thickness and bending angle:				
Steel, UTS 59 ksi	0.126 (±90°)	0.126 (±90°)	0.126 (±90°)	0.126 (±90°)
Stainless steel, UTS 96 ksi	0.098 (±90°)	0.098 (±90°)	0.098 (±90°)	0.098 (±90°)
Aluminium, UTS 38 ksi	0.157 (±120°)	0.157 (±120°)	0.157 (±120°)	0.157 (±120°)

MACHINE DATA	P4-3220	P4-4020		
Maximum bending length (in)	126	15.75-126	126-151.57	151.57-157.48
Maximum bending height (in)	8	8		
Minimum thickness (in)	0.020	0.020		
Maximum thickness and bending angle:				
Steel, UTS 59 ksi	0.126 (±90°)	0.126 (±90°)	0.098 (±125°)	0.063 (±130°)
Stainless steel, UTS 96 ksi	0.098 (±90°)	0.098 (±90°)	0.098 (±90°)	0.051 (±120°)
Aluminium, UTS 38 ksi	0.157 (±120°)	0.157 (±120°)	0.157 (±120°)	0.126 (±12°)

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B3

The ideal press brake for dynamic production.

The B3 was designed by combining the features and benefits of **electric** and **hydraulic** press brakes with Salvagnini's in-depth knowledge of **automation, software, mechanics** and **electronics.** Whatever the level of **automation** chosen from the 4 available, the B3 remains the solution with the smallest footprint available on the market.

- Available in a wide range of sizes, from 79 to 236 inches, and from 66 to 441 US ton.
- MAC2.0 technology guarantees bending repeatability and precision.
- Reduces power consumption while maintaining high levels of productivity with the **Salvagnini Power Unit.**
- Allows kit and batch-one production and efficient bending of parametric parts thanks to ATA and AU-TO automation.
- Ideal for Industry 4.0 cells and automation, thanks to the OPS software.
- Ready to be connected with Salvagnini's IoT solution, LINKS.

MACHINE DATA	60/2000	100/3000	135/3000	135/4250	170/3000	170/4250	170/4250XL	220/3000
Maximum bending force (US Tons)	66	110	149	149	187	187	187	242
Maximum speed [ipm]	590.6	590.6	590.6	590.6	590.6	590.6	519.7	519.7

MACHINE DATA	220/4250	220/5100	220/6100	320/3000	320/4250	320/5100	400/4250	AU-TO 170/4250	AU-TO 220/4250
Maximum bending force (US Tons)	242	242	220	352	352	352	441	187	242
Maximum speed [ipm]	519.7	519.7	425.1	519.7	519.7	519.7	519.7	590.6	519.7

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ROBOformER

Automated, robotized bending cell.

- Depending on the configuration chosen, consists of a B3 press brake, a robot and a number of devices for automatic sheet metal handling.
- In the ATA configuration, automatically adapts the upper and lower tools in-cycle.
- Managed by a single controller and controlled by a single program, allows unmanned production, with no need for robot teaching.
- In the AU-TO configuration, automatically replaces and adapts the upper and lower tools in-cycle.

Repeatability, flexibility, versatility: all the advantages of robotized bending.

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L3

Multi-purpose adaptive fiber laser.

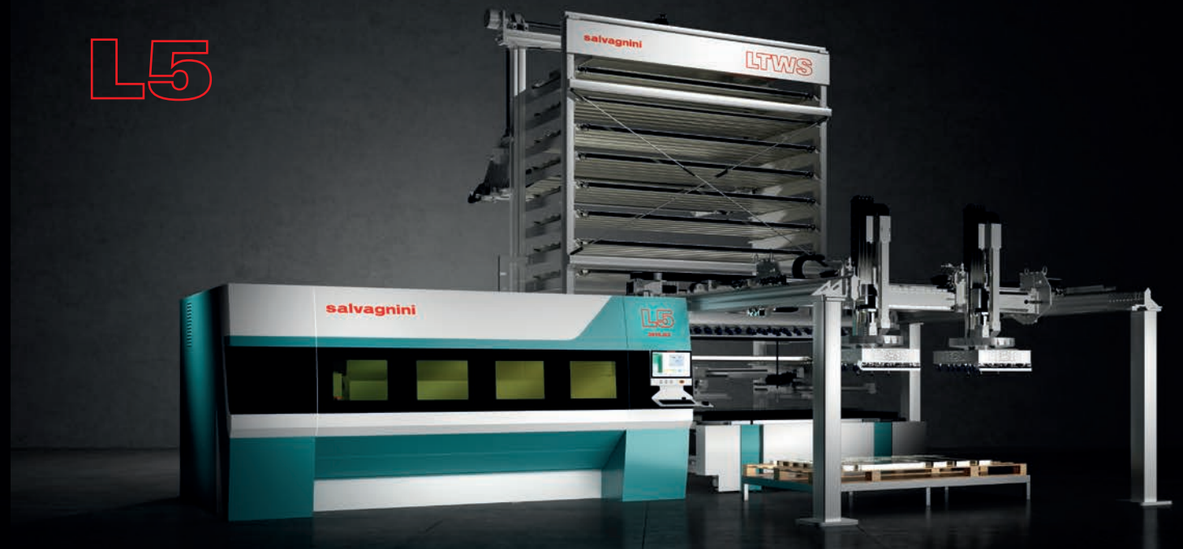
- Available in 4 sizes, for processing sheets from 120" to 236" in length and 59" to 79" in width.
- Feature an airplane structure to guarantee processing precision and stability.
- The Tradjust function automatically adjusts the cutting parameters according to the trajectories.
- Ready to cut with nitrogen and oxygen, while the ACUT option allows them to cut with compressed air too.
- Offer full control of the cutting area and the automation, thanks to the central position of the touch-screen monitor.
- Equipped with a single optics head offering high-quality cuts across the entire range of workable thicknesses.
- Suitable for unmanned operation, since the fast pallet changer always moves the sheet to be cut above the one that has already been machined.

MODELS				
	L3-30	L3-40	L3-4020	L3-6020
XY working range (in)	120 x 60	160 x 60	160 x 80	240 x 80

FIBER SOURCES						
Fiber laser source (W)	2000 W	3000 W	4000 W	6000 W	8000 W	10000 W
Cutting capacity (maximum thickness) (in)[1]						
Steel	0.591	0.787	0.787	1	1	1
Stainless steel	0.394	0.472	0.591	0.787	1	1.181
Aluminium	0.315	0.394	0.591	0.787	1	1.181
Copper	0.197	0.315	0.315	0.315	0.394	0.394
Brass	0.197	0.236	0.315	0.315	0.394	0.394
Minimum thickness (in)	0.020					
Average electricity consumption (kW)	11	12	13	16	20	24

[1]These values are for the Salvagnini reference materials.

L5



High-dynamic fiber laser.

- Guarantee easy access to the worktable for rapid part pick-up and lean maintenance.
- Integrate advanced solutions for process control and efficiency:
  - APC2 monitors piercing in real time, for greater speed and higher quality;
    AVS speeds up the centering of the metal sheet, and
  - allows earlier machining operations to be used as references;
  - SVS regains scrap and sheet metal leftovers;
  - NVS checks the centering of the laser beam and the state of the nozzle.
- Achieve maximum autonomy thanks to numerous manual and automatic feeding and unloading devices, as well as the sorting systems and modular store-towers available.
- Ideal for Industry 4.0 cells and automation, thanks to the OPS software.
- Ready to be connected with Salvagnini's IoT solution, LINKS.

MODELS		
	L5-30	L5-40
XY working range (in)	120x60	160x60

FIBER SOURCES						
Fiber laser source (W)	2000 W	3000 W	4000 W	6000 W	8000 W	10000 W
Cutting capacity (maximum thickness) (in)[1]						
Steel	0.591	0.787	0.787	1	1	1
Stainless steel	0.394	0.472	0.591	0.787	1	1.181
Aluminium	0.315	0.394	0.591	0.787	1	1.181
Copper	0.197	0.315	0.315	0.315	0.394	0.394
Brass	0.197	0.236	0.315	0.315	0.394	0.394
Minimum thickness (in)	0.020					
Average electricity consumption (kW)	11	12	13	16	20	24

[1] These values are for the Salvagnini reference materials.

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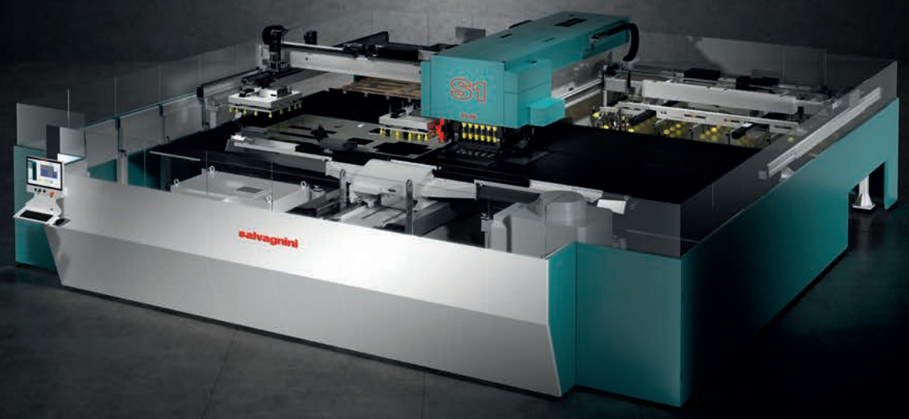
S1



Punch-laser with adaptive hybrid technology.

- Equipped with a multi-press head featuring advanced hybrid technology that guarantees high quality processing and reduced cycle times, since the tools are always available.
- Equipped with a manipulator featuring two independent trolleys to optimize sheet reachability and guarantee precision, repeatability and high dynamics.
- Uses a reliable, green hybrid actuator, which reduces absorption by 20% compared to common electrical solutions.
- Can be integrated with the entire Salvagnini automation range.
- Offers different possibilities for unloading, depending on the production strategy set:
  - single-part with skeleton destruction, for in-line processing;
  - single part with skeleton evacuation by the optional manipulator equipped with pincers and suction cups, for easy and precise automatic stacking.
- Ideal for Industry 4.0 automation and in-line processing, thanks to the OPS software.
- Ready to be connected with Salvagnini's IoT solution, LINKS.

MACHINE DATA	S1.30	S1.40
Maximum sheet dimensions (in)	120 x 60	160 x 60
Minimum sheet dimensions (in)	15 x 12	

Punching	
Max thickness of sheet (in)	
Aluminium, UTS 38 ksi	0.197
Steel, UTS 59 ksi	0.197
Stainless steel, UTS 96 ksi	0.197
Min thickness of sheet (in)	0.020

Laser	
Technology	fiber
Source	fiber
Max power (W)	2000 - 3000
Max thickness of sheet (in)	0.197
Assist gas	Nitrogen, compressed air

S4

Punching-shearing center.

- Equipped with a multi-press head, a solid die-structure that holds up to 96 tools which are always available and doesn't require re-tooling for production changes. The shear is integrated into the structure, for superior quality machining.
- Minimizes cutting scrap and eliminates holding scrap.
- Ideal for flow processing thanks to the Punch&Cut function.
- Automatically punches and cuts the parts, performing all the loading/unloading/sorting tasks in masked time.
- Can be integrated with the entire Salvagnini automation range.
- Ideal for Industry 4.0 automation and in-line processing, thanks to the OPS software.
- Ready to be connected with Salvagnini's IoT solution, LINKS.

MACHINE DATA	S4.30	S4.40
Maximum sheet dimensions (in)	120 x 65	160 x 65
Maximum sheet diagonal (in)	137	173
Minimum sheet dimensions (in)	15 x 12	

Punching	
Punching tool change time (s)	0*
Possibility of activating two or more tools simultaneously	yes
Max thickness of sheet (in/gage)	
Aluminum, UTS 38 ksi	0.197
Steel, UTS 59 ksi	0.138
Stainless steel, UTS 88 ksi	0.079
Min thickness of sheet (in/gage)	0.02

Shearing	
Cutting technology	simultaneous or independent X and Y axis
Blade clearance adjustment	automatic
Length of shear blades X x Y (in)	19.5 x 19.5
Max thickness of sheet (in/gage)	
Aluminum, UTS 38 ksi	0.197
Steel, UTS 59 ksi	0.138
Stainless steel, UTS 88 ksi	0.079

*each tool is always ready for use

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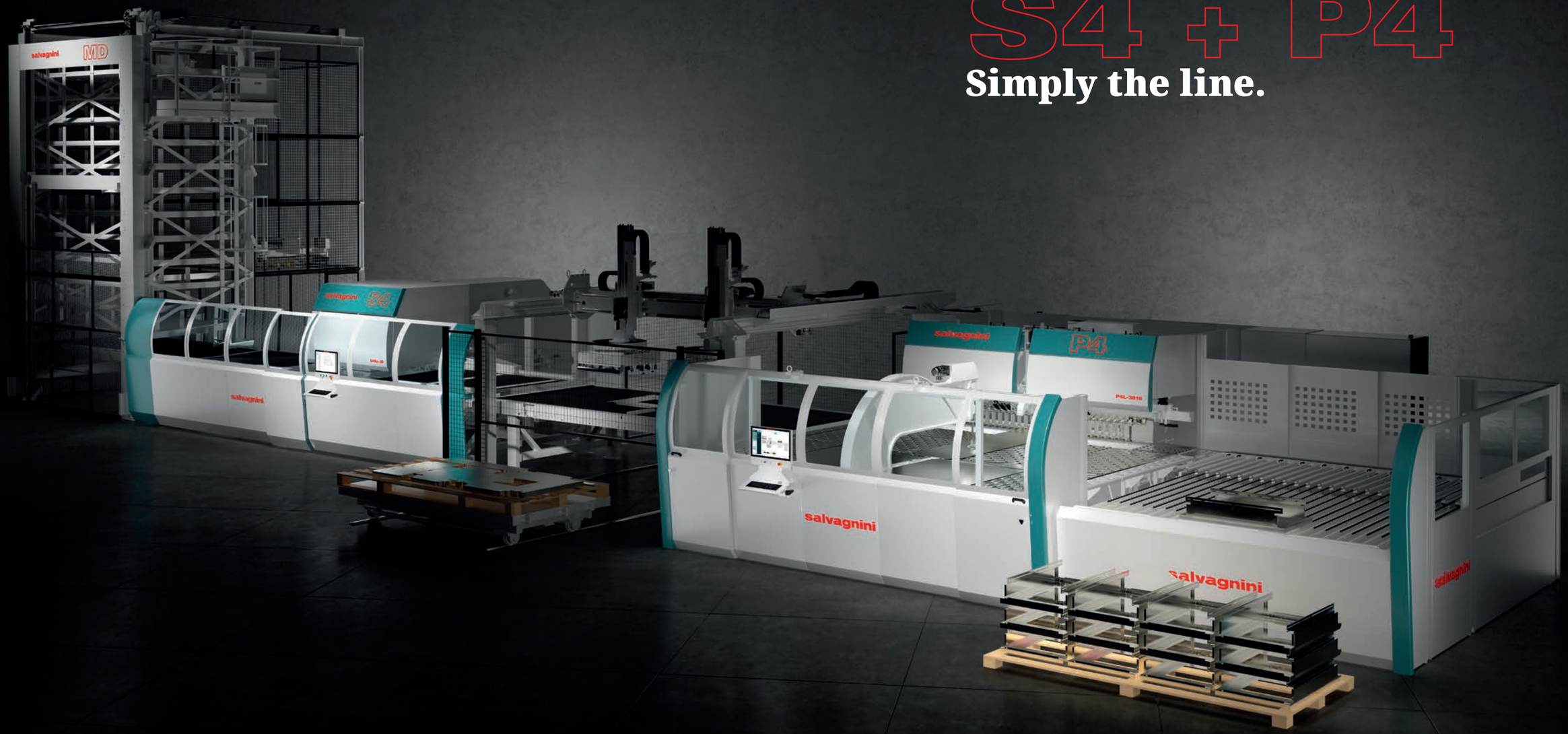
S4 + P4

Simply the line.



- Automatically punches, cuts and bends sheet metal without intermediate handling.
- Combines productivity and flexibility: the ideal solution for any production strategy, be it kit, single-batch or series production.
- Can be integrated with the entire Salvagnini automation range.
- Ideal for Industry 4.0 automation and in-line processing, thanks to the OPS software.
- Ready to be connected with Salvagnini's IoT solution, LINKS.

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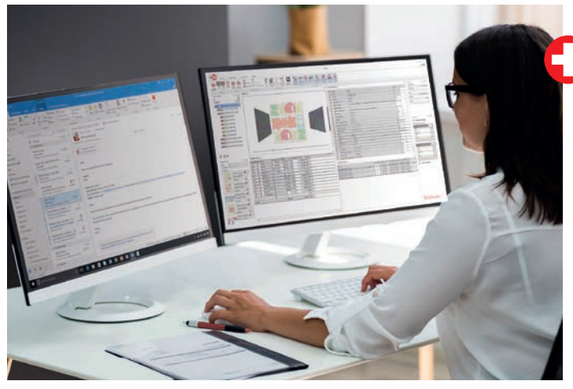
The human-sized software suite.

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. STREAM is the integrated ecosystem 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.

The programming suite includes 4 CAM modules, associated with each individual technology.



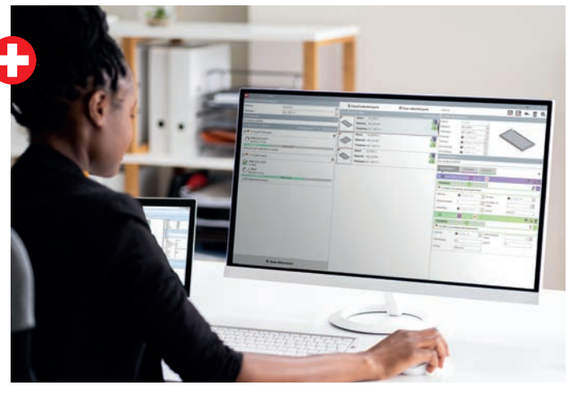
VALUES

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 on that of the entire process, including upstream and downstream machining where necessary.

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 is integrated with the CAM software.



Coordinate your factory, in real time.

OPS

OPS is the modular production management software. Within the production equation, it acts as the central coordinator, managing and distributing information among all the environments and stakeholders involved, eliminating critical points and drastically improving process efficiency.

The OPS applications for simplifying workshop management include PDD, which supports the operator via the monitor for manual part separation and sorting, and LPG, which laser-guides the operator in the pick-up sequence.

OPS receives the production list from the factory information management system in real time, and delivers an updated version to the programmer. It can support the programmer's activities by defining priorities, automatically generating the machine programs and sending them to the workshop. It checks the availability of raw materials or semi-finished parts and generates feedback to the factory information management system, updating it in real time, part by part. It can make autonomous decisions according to a production logic – or according to a multiple mix of production logics – designed to meet the needs of the customer and transformed into an algorithm. It integrates labeling, traceability and store-tower management upstream and downstream of the cutting, punching and bending activities.

IoT to serve efficiency

LINKS is Salvagnini's IoT solution that monitors the **performance of all systems.** It offers access to production data, logbooks, performance KPIs and telemetry, as well as parameter monitoring by the Condition Monitoring process, thus increasing the overall equipment efficiency.

LINKS

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