

# ***PRODUCT CATALOG***



## Introduction to the company

**Stori Mantel s.r.o. has been on the wood machining and pallet technology market since 1995.** The company's origins date back to 1947 when Fritz Störi sen. established Störi Ent. Co., a Swiss company that originally manufactured thermoelectric technology, heat pumps and control systems for industrial companies. Its manufacturing activities subsequently expanded into producing wood machining equipment, which has been manufactured in the Czech Republic since 1995.

From the very beginning at our production plant in Rožnov pod Radhoštěm, we focused on manufacturing rip saws with floating aggregate – today's **single blade ripsaws**. We are currently one of the largest manufacturers and exporters of this technology in Europe. In the area of **cross-cut saws**, we offer a wide range of machines ranging from simple under-table cross-cut saws to complex cutting optimization centers.

Continuous development and precise production and manufacturing quality of our products have allowed us to design new machines and equipment in the field of **palletizing technology**. Our portfolio of machines gradually expanded to include nailing machines, complete lines for pallet processing, and high-capacity pallet production lines.

We not only produce wood cutting machines and palletizing technology, but we also offer our customers expert advice combined with the comprehensive supply of technological units and professional servicing. We not only produce serial machines—we strive to adapt our services to your needs and always offer efficient solutions to meet your specific requirements. Our machines can be expanded with other essential components that use various conveyor belts and other equipment. This means our machines can "grow" according to your needs.

Over the company's lifetime, we have produced and exported **more than 2500 wood cutting machines and pallet technology units** to Europe and abroad.

We would be happy to successfully support your business with our products and services.

This continues to be our goal for the future.

On behalf of the entire Stori Mantel team,  
Ing. Pavel Frňka, Company Director

## Table of Contents:

Introduction to the company.....	2
FLS Technology - Single Blade Ripsaws.....	3
FLS Technology options.....	4
FLS 120/160 ECO.....	5
FLS 170/210 ARROW I.....	6-7
UKS & FLS ARROW I.....	8
FLS ARROW II.....	9
FLS Technology - Examples from practice.....	10-11
Cross-cut technology.....	12
UKS 400.....	13
UKS 700.....	14
UKS 850.....	15
UKS 1000/1000 MAX.....	16
KP 500 AUTOMAT.....	17
KP 900 AUTOMAT.....	18
UKS 850/1000/1000 MAX AUTOMAT.....	19
KP 500 OPTIM.....	20
KP 900 EASY CUT OPTIM.....	21
UKS 850/1000/1000 MAX OPTIM.....	22
Cross-cut technology - Examples from practice.....	23-24
SMPT Technology - Machines for pallet production.....	25
SMPA 500.2 ED.....	26
SMPA 500.2 LP ED.....	27
SMOP After-treatment line, SMPS pallet stacker.....	28
SMPT Technology - Examples from practice.....	29
Palletizing line configuration options.....	30-31
SMHC-Line High capacity line for pallet production.....	32-35
SM-VM 01 Vacuum Handler.....	36
Vacuum handler - Examples from practice.....	37
WST 1200 Packet turner.....	38
Quality control of nailing.....	39



### FLS technology – rip saws

Growing timber prices and production expenses, short delivery times, and issues related to timber material quality while maintaining the high-quality of given products is a task that all small, medium, and large-sized companies face today. Enormous savings can be achieved in this area. Every millimeter of timber saved during wood-processing activities contributes to higher profit. FLS technology represents a modern and universal way for **material ripping and formatting using a single blade saw with a floating aggregate and great emphasis on flexibility**. This time-tested technology improves yield and work productivity and appreciates the timber quality, particularly focusing on clean cuts. It ensures a high level of safety and simple control by the operating personnel.

#### Saw design and principle:

The cut material, firmly fixed on a work bench, is cut longitudinally using a floating saw blade. Once the cut is complete, the saw blade slides under the saw work bench and the entire floating aggregate moves to the initial position. Using the rear longitudinal stop (ruler), the processed material is automatically slid into a new position for the appropriate width of the cut.

#### Use:

Thanks to its universality, FLS technology is used not only for small and medium-size operations. FLS rip saws can process slabs, planks, squared timber and large-surface materials, edge and rip material and, if needed, produce blanks and slats. They can be also used for angled ripping and beveling. This technology also allows other materials (plastic, ALU, insulation sandwich panels with steel reinforcement, cement-bonded particle boards, etc.) to be cut. Thanks to high speed and precision individual cutting and a high degree of processing flexibility when working with diverse materials, FLS rip saws are appreciated in saw manufacturing and at furniture workshops. They are used in producing windows and staircases, processing large-surface materials, carpentry, and production of insulation panels, etc.

#### Advantages:

The rear adjustable stop allows a given cut width to be quickly and accurately setup. It can be set manually or by using three basic control programs. The absolute positioning mechanism accurately sets the required material width. The width can be easily adjusted by simple selection of a given value from the table of absolute cut widths. The chain positioning mechanism automatically moves the rear stop by the required

width when the given cut is complete. The width value can be selected from the table of the programmed widths. The program of course considers the width of the cutting saw blade. The optimizing program automatically combines the required cut values, ensuring that maximum yield of the cut material is achieved. The saw implements the selected cut combination automatically with minimal input needed from operation personnel.

#### Single blade saw product line:

To satisfy various customer requirements and optimize its production capacities, Störi Mantel offers a comprehensive product line of FLS technology, one blade ripsaws, including customized solutions.

**FLS ECO** - one of the economically very popular material ripping technology products

**FLS ARROW I** - a robust material ripping technology design with many optional accessories

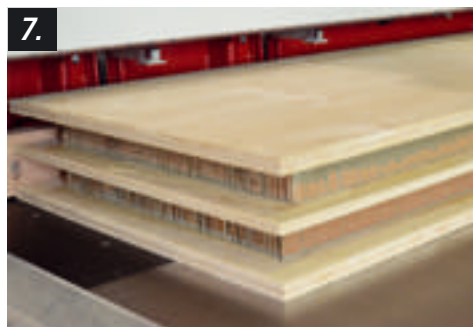
**FLS ARROW II** - a robust design with upper suspension of the travel cutting aggregate and the option to make very deep cuts



## FLS TECHNOLOGY OPTIONS



**1./2./3./4./5./6./7./8./9.** FLS technology allows not only for longitudinal, cross and angled cuts, but also for beveling, in-packet cutting, ripping large surface materials, cement-bonded particle boards, sandwich panels with steel reinforcement, etc.





# FLS 120/160 ECO



## Technical data

- Engine power 11 kW (15 kW option), 2900 rpm
- Cut height standard 0 - 120 mm / 0 - 160 mm
- Saw blade  $\varnothing$  450 to  $\varnothing$  500 mm /  $\varnothing$  550 mm
- Inner  $\varnothing$  of the saw blade  $\varnothing$  80 mm
- Adjustable feeding speed into the cut 0 - 60 m/min.
- Cut length standard 2.2 m to 6.2 m
- Cut width standard 420 mm (optionally up to 1600 mm)
- Working height  $850 \pm 50$  mm
- Outer dimensions Length = cut length + 1800 mm  
Width = 1300 mm (standard)  
2 x  $\varnothing$  160 mm
- Exhaust 25 - 30 m/s
- Required exhaust speed 0.8 MPa
- Pressurized air connection 400 V/3/50 Hz
- Power supply

We begin our introduction of FLS rip saw technology with an economically attractive and highly popular product, specifically the **FLS 120/160 ECO**, which will find applications both in small and medium-size operations. This FLS ECO line is based on verified FLS standards. If you do not process large volumes of material, but need to be flexible as you fill your orders and need a rip saw with a high cutting output and safe operation, then you will find this rip saw to be an excellent and efficient tool with high economic return (single-person operation, increased yields by 10 - 15% etc.)



1.



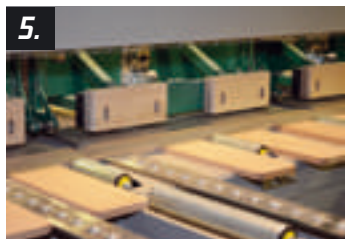
2.



3.



4.



5.



6.



7.



8.

1. Double-precision bearings for saw carriage
2. Backstop drive system optional and designed according to the machine usage and customer requirements
3. Input chain conveyor increases labour productivity (optional)
4. Metal plates with ball rollers allow easy manipulation of heavy materials
5. Submersible rollers at the front table for transporting cut-off materials
6. Auxiliary arms for removing cut-off materials
7. Clearly structured control panel with touchscreen and dual 25 mm LED display for easy reading of absolute and chain positions
8. Overhead suspension of the exhaust tunnel



Awarded Gold Medal





# FLS ARROW I

The STORI MANTEL line includes the **FLS ARROW I single blade ripsaw**, allowing manufacturers to meet various demands for processing massive wood and large-area materials and optimize production capacities, with special technologies for separating plastic, thin steel profiles, and sandwich isolation panels with steel reinforcement.

The basic variant of this model already has a range of technical innovations and is a generally very well received and popular product. It increases yields, work productivity, and quality of wood matter with special emphasis on clean and precise cuts. Emphasis is also placed on simple operation of the machine along with **safe operation**.



## Technical data

- Engine power 11 kW (15 kW, 18.5 kW, 22 kW options), 2900 rpm
- Cut height standard 0 - 170 mm / 0 - 210 mm
- Saw blade  $\varnothing$  450 to  $\varnothing$  550 mm /  $\varnothing$  650 mm
- Inner  $\varnothing$  of the saw blade  $\varnothing$  80 mm
- Speed feed into the cut 0 - 80 m/min.
- Cut length standard 2.2 m to 16.2 m
- Cut width standard 450 mm (optionally up to 3000 mm)
- Working height 850  $\pm$  50 mm
- Outer dimensions Length = cut length + 2200 mm  
Width = 1300/1320 mm
- Exhaust 2 x  $\varnothing$  160 mm
- Required exhaust speed 25 - 30 m/s
- Pressurized air connection 0.8 MPa
- Power supply 400 V/3/50 Hz



## **UKS & FLS ARROW I**



*FLS 170/210 Arrow I combined with UKS 700. The combination of lengthwise and crosswise separation of material leads to a significant increase of the yield. With respect to the dimensions of the cut material and achieved production capacity, we recommend using shortening saws with a movement system for optimum configuration of the cut diagram (optional).*





## FLS ARROW II



A completely new method for suspending the mobile unit represents a revolutionary solution for lifting the saw. This concept will also find applications in heavy sawing operations. The basic variant of this FLS machine already allows the machine to be included in technological lines, providing efficient and rational utilization of **FLS technological advantages.**

### Technical data

- |                              |   |
|------------------------------|---|
| • Engine power               | 15 kW (18.5 kW, 22 kW, 30 kW options), 2900 rpm     |
| • Cut height standard        | 0 - 210 mm/(0 - 300 mm option)                      |
| • Saw blade                  | ø 500 - ø 650 mm (ø 900 mm)                         |
| • Inner ø of the saw blade   | ø 80 mm   |
| • Speed feed into the cut    | 0 - 80 m/min.                                       |
| • Cut length standard        | 2.2 m to 16.2 m                                     |
| • Cut width standard         | 450 mm (optionally up to 3000 mm)                   |
| • Working height             | 850 ± 50 mm   |
| • Outer dimensions           | Length = cut length + 2200 mm<br>Width 1350/1400 mm |
| • Exhaust                    | 2 x ø 160 mm  |
| • Required exhaust speed     | 25 - 30 m/s   |
| • Pressurized air connection | 0.8 MPa   |
| • Power supply               | 400 V/3/50 Hz                                       |



1. FLS with an automatic material feeder and timber pile dismantler
2. Rear material feeder
3. Large-surface material formatting
4. FLS machine operations
5. Cross-longitudinal formatting of PUR sandwich panels with steel reinforcement
6. Optional FLS ECO machine extension - Adjustable cross bench





1. Hydraulic lifting platform for material feeding
2. Automated center for material longitudinal and cross formatting (FLS ARROW I/UKS 1000 OPTIM)
- 3./4. Formatting construction panels with cement cores



### Cross-cut technology

Very demanding requirements to do with material shortening are also placed on yield, flexibility, efficiency, and quality when individual production orders are implemented. Apart from required shortened delivery times, manufacturers need to fully depend on the production technology used. Material cross-cut machines represent yet another production item in our company's portfolio suitable for small to large operations.

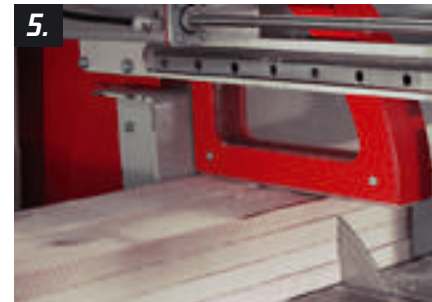
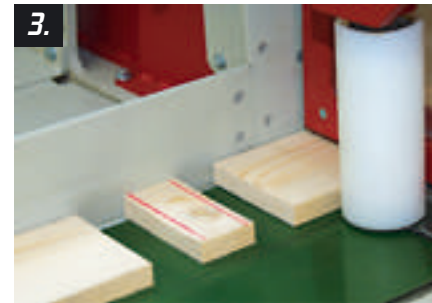
#### Cross-cut saw product line:

To satisfy various customer requirements and optimize its production capacities, Störi Mantel offers the following product line of cross-cut saws:

1/ Under the table cross-cut saws UKS400/700/850/1000/1000 MAX with pneumatic or hydraulic lifting of the saw blade. Individual machines differ in their main engine power output and their cutting diagrams.

2/ Cutting automats for precision cutting of individual panels or as packets. These automats are manufactured as the following models: KP 500 AUTOMAT, KP 900 AUTOMAT and UKS 850 AUTOMAT, UKS 1000 AUTOMAT and UKS 1000 MAX AUTOMAT. Individual machines differ in their main engine power output, cutting diagrams, and production capacity.

3/ Optimized cross-cut saws for material length and qualitative optimization under the following models: KP 500 OPTIM, KP 900 EASY CUT OPTIM, UKS 850 OPTIM, and UKS 1000 OPTIM. Individual machines differ in their main engine power output, cutting diagrams, and production capacity. The design of the machines allows optional accessories to be used for input material feeding and output sorting and collection.



1. Cutting unedged material
- 2./3. Removing defects with optimization
4. Cutting circular materials
5. Cutting packets
6. Printing on the cut pieces

# UKS 400/700/850/1000/1000 MAX



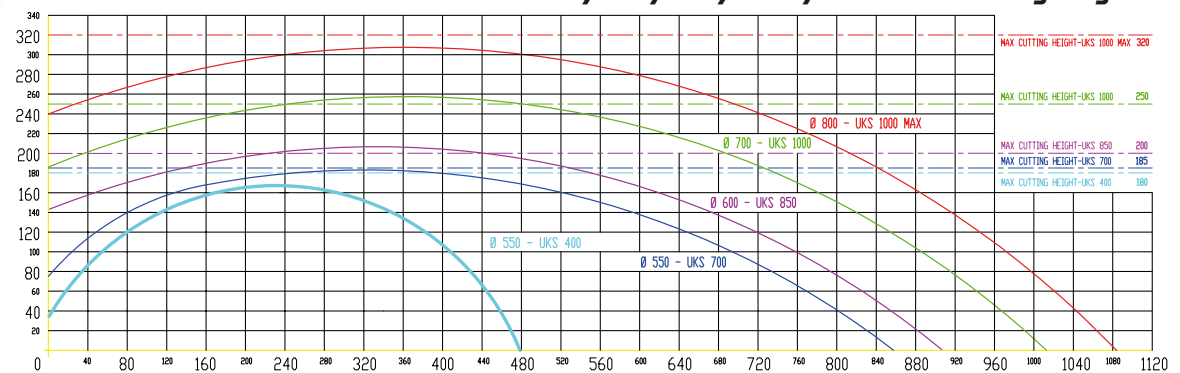
The UKS 400, UKS 700, UKS 850, UKS 1000, and UKS 1000 MAX **cross-cut saws** are intended for shortening plastered and edged lumber as well as other materials (flakeboards, plastic, sandwich panels etc.). The machine can cut material individually or in packets. These machines find applications in furniture production, plastic separation, thin steel profiles, pipes, and sandwich isolation panels with steel reinforcement.

**Under-the-table shortening saws** are supplied with hydraulic or pneumatic lifting of the saw and a holder for the cut material. The saw is equipped with all safety elements - two-hand controls, safety covers (a cover for the saw and a front cover - either fixed or retractable). The upper cover of the blade also serves as a means of applying pressure to the cut material. The UKS cross-cut saws can be complemented by several conveyor system variants (with or without drive), both at the input and the output, with configurable stops (manual, pneumatic, or hydraulic). The saw can be supplied as either a left or right configuration.

## Technical data

- Max. diameter of saw blade  $\varnothing$  550 mm
- Engine power 5.5 kW (7.5 kW option)
- Holding diameter of saw blade  $\varnothing$  80 mm
- Exhaust 2 x  $\varnothing$  120 mm
- Air consumption 7.5 l/cycle
- Pressurized air connection 0.8 MPa
- Machine weight 450 kg
- Power supply 400 V/3/50 Hz

UKS 400/700/850/1000/1000 MAX cutting diagram



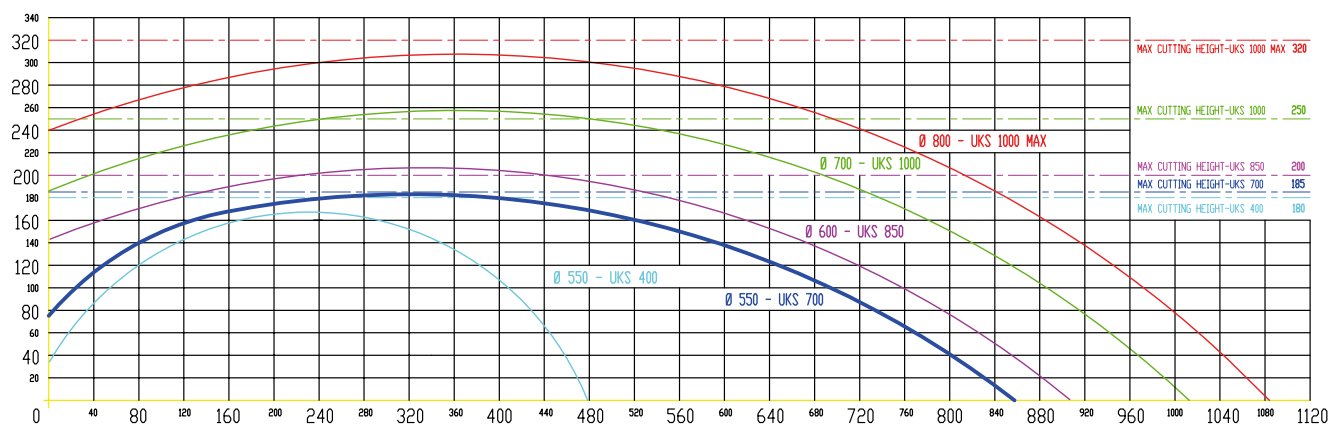
## UKS 400/**700**/850/1000/1000 MAX



### Technical data

- Max. diameter of saw blade  $\varnothing$  550 mm
- Engine power 5.5 kW (7.5 kW option)
- Holding diameter of saw blade  $\varnothing$  80 mm
- Exhaust 2 x  $\varnothing$  120 mm
- Air consumption 26 l/cycle
- Pressurized air connection 0.8 MPa
- Machine weight 600 kg
- Power supply 400 V/3/50 Hz

UKS 400/**700**/850/1000/1000 MAX cutting diagram







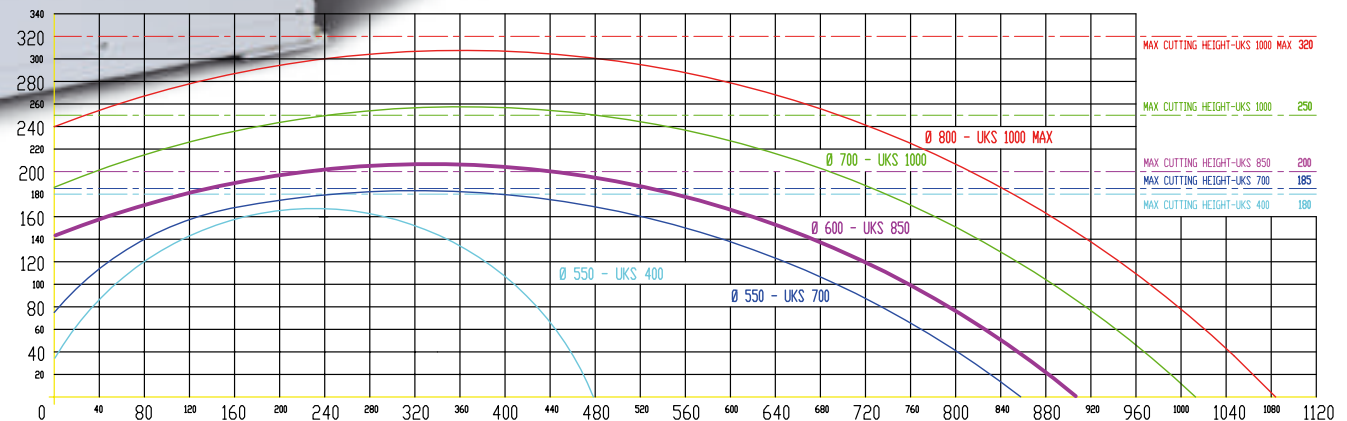
# UKS 400/700/850/1000/1000 MAX

## Technical data

- Max. diameter of saw blade  $\varnothing$  600 mm
- Engine power 7.5 kW (11 kW, 15 kW options)
- Holding diameter of saw blade  $\varnothing$  80 mm
- Exhaust 2 x  $\varnothing$  120 mm
- Air consumption 26 l/cycle
- Pressurize air connection 0.8 MPa
- Machine weight 600 kg
- Power supply 400 V/3/50 Hz



UKS 400/700/850/1000/1000 MAX cutting diagram



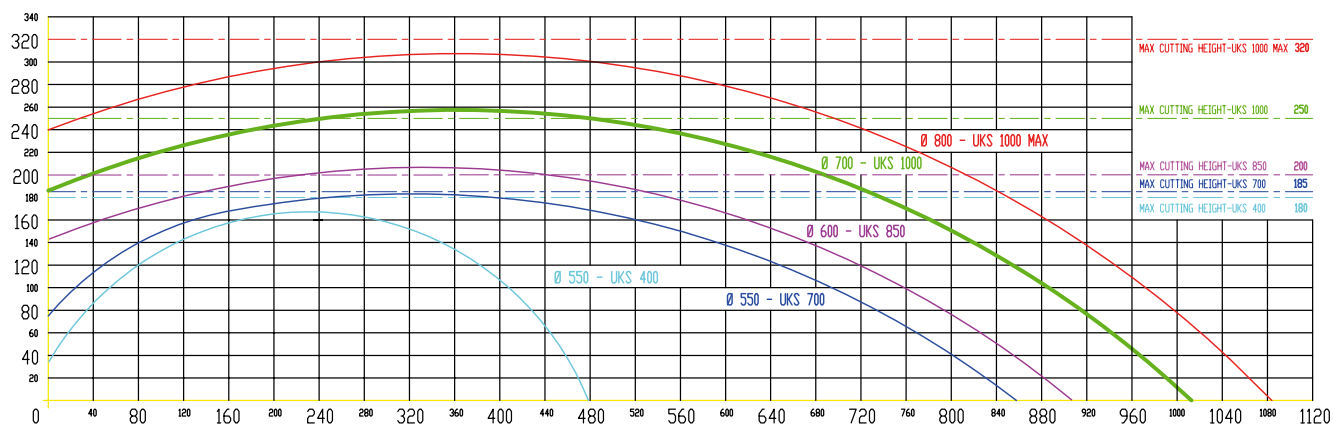
## UKS 400/700/850/1000/1000 MAX



### Technical data

- Max. diameter of saw blade UKS 1000 -  $\varnothing$  700 mm  
UKS 1000 MAX -  $\varnothing$  800 mm
- Engine power UKS 1000 - 11 kW/15 kW  
UKS 1000 MAX - 15 kW/22 kW
- Holding diameter of saw blade  $\varnothing$  80 mm
- Exhaust 2 x  $\varnothing$  120 mm
- Air consumption per cutting cycle 30 l/cycle
- Pressurized air connection 0.8 MPa
- Machine weight 750 kg
- Power supply 400 V/3/50 Hz

### UKS 400/700/850/1000/1000 MAX cutting diagram





# KP 500 AUTOMAT

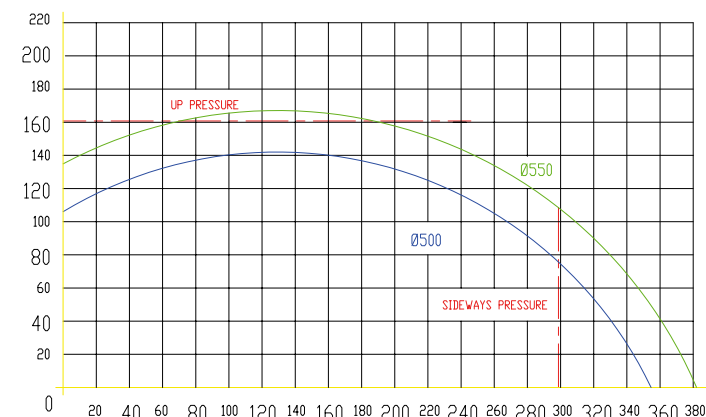
An automatic program-controlled, **KP 500 AUTOMAT cross-cut saw**. Material is brought into the saw and positioned by a feeding device. Entry and subsequent selection of cut lengths is carried out via a touchscreen – quick and easy. The operator places the material individually or in a packet on the feeding table, confirms the cycle, and the automatic feeding and material trimming starts. The trimmed packet at the output of the saw corresponds to the requirements stated in the cutting diagram. Mechanization at the input and output of the machine is possible. The saw can be supplied in either a left or right configuration.



## Technical data

- Saw blade  $\varnothing$  500 to  $\varnothing$  550 mm
- Engine power 5.5 kW (7.5 kW option)
- Loader drive Servomotor
- Material input precision  $\pm 0.5$  mm
- Material feeding speed 60 m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 1 x  $\varnothing$  120 mm - 30 m/s
- Operating height 850 mm
- Automatic inspection of packet height
- Control panel with touchscreen
- The length of the feeder table is based on customer requirements 3.2 m – 7.2 m
- High-precision, long service life, safe operation

**KP 500 AUTOMAT cutting diagram**





## KP 900 AUTOMAT

### The automatic cross-cut saw KP 900 AUTOMAT

is intended for the shortening of cuboids, prisms and desks. It was designed to replace heavy manual work and to reduce errors. It will find applications in saw plants and in companies focusing on the production of pallets, packaging, floors and furniture.

The material (either in individual pieces or in packets) is fed into the saw and positioned by a feeder. Entry of parameters and subsequent selection of cut lengths is carried out via a touch screen – easy and quick. Mechanization at the input and output of the machine is possible.

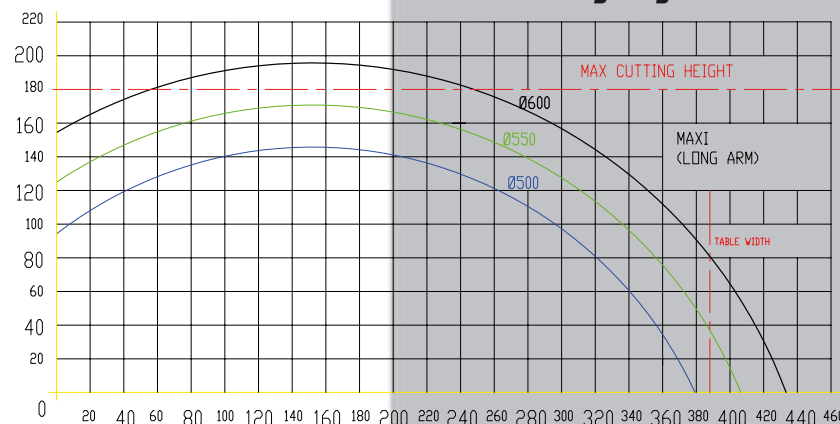
The saw can be supplied in either the left or the right variant.



### Technical data

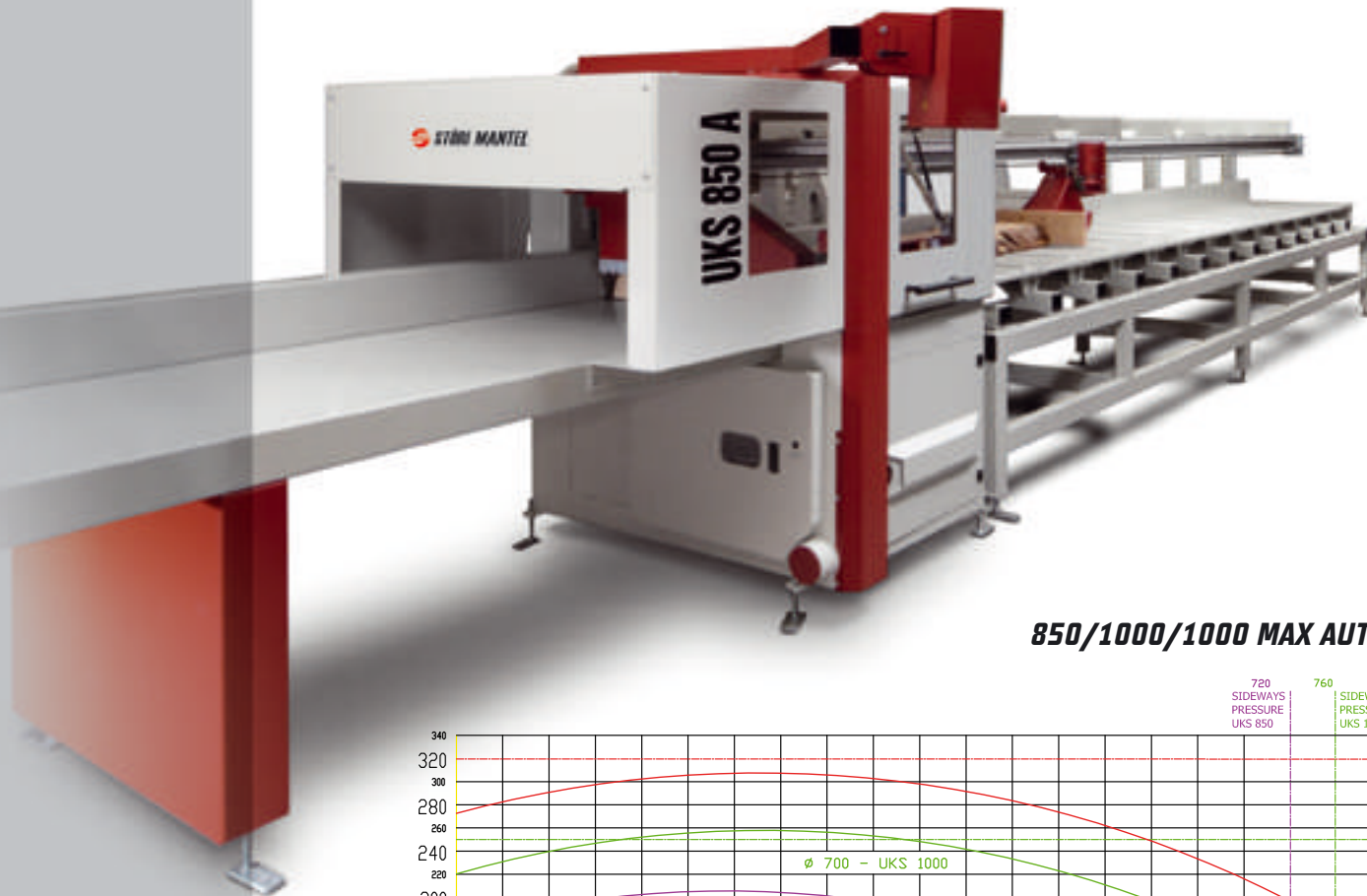
- Saw blade  $\varnothing$  500 to  $\varnothing$  600 mm
- Engine power 7.5 kW (11 kW, 15 kW options)
- Cut precision  $\pm 0.5$  mm
- Feeding speed max. 60 m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 2x  $\varnothing$  120 mm - 30 m/s
- Operating height 850 mm
- Integrated control panel with touchscreen
- SM OPTIMAL software
- The length of the feeder table is based on customer requirements 3.2 – 7.2 m (up to 14 m - optional)
- High-precision, long service life, safe operation
- Power supply 400 V/3/50 Hz

KP 900 AUTOMAT cutting diagram





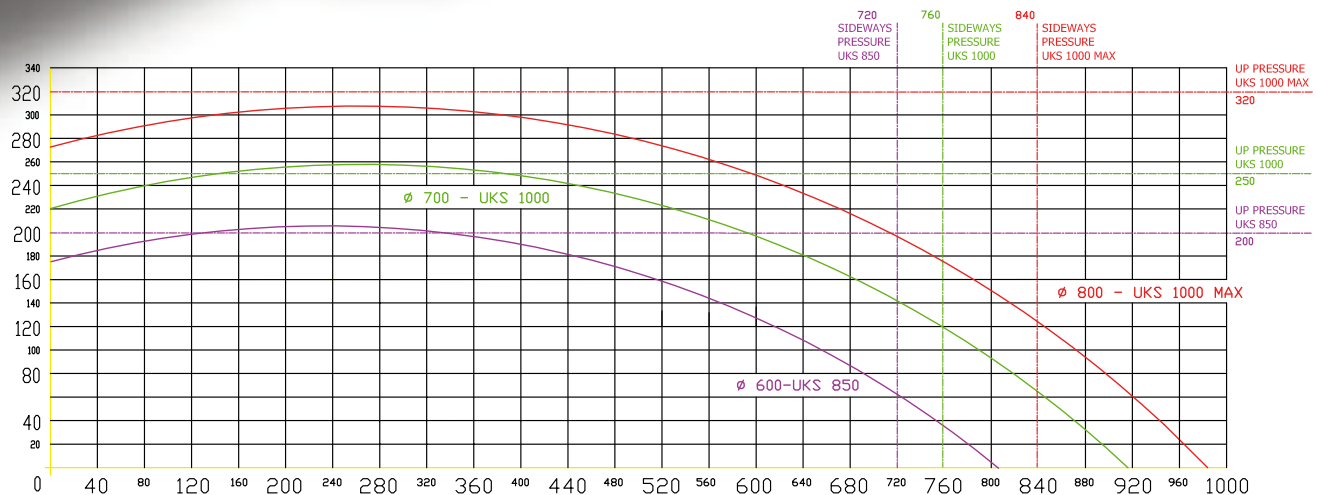
# UKS 850/1000/1000 MAX AUTOMAT



## Technical data

- Saw blade  $\varnothing$  600-  $\varnothing$  800 mm
- Engine power 11 kW (15 kW, 22 kW options)
- Holding diameter of saw blade  $\varnothing$  80 mm
- Material input speed 60 (optionally 120) m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 2 x  $\varnothing$  120 mm - 30 m/s
- Power supply 400 V/3/50 Hz

850/1000/1000 MAX AUTOMAT cutting diagram



## KP 500 OPTIM

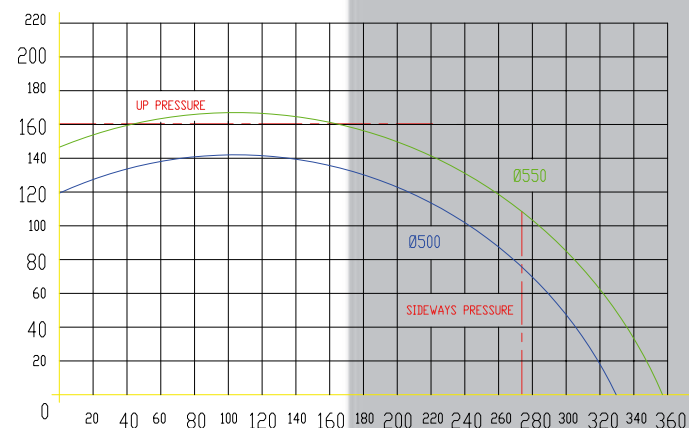
**KP 500 OPTIM is a saw for optimization** (cut out defects) and setting lath lengths. This very popular version is based on the verified standards given by the KP 900 EASY CUT OPTIM model. The operator performs a visual inspection of the material and marks all defects with chalk. Material is automatically „scanned“ and positioned for cutting.



### Technical data

- Saw blade  $\varnothing$  500 to  $\varnothing$  550 mm
- Engine power 5.5 kW (7.5 kW option)
- Cutting accuracy  $\pm 0.5$  mm ( $\pm 0.1$  mm optional)
- Maximum feeding speed 120 m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 1 x  $\varnothing$  120 mm, 30 m/s
- Operating height 850 mm
- Integrated control panel with touchscreen
- SM OPTIMAL control software
- The length of the feeder table is based on customer requirements 3.2 – 7.2 m
- High-precision, long service life, safe operation

**KP 500 OPTIM cutting diagram**





# KP 900 EASY CUT OPTIM



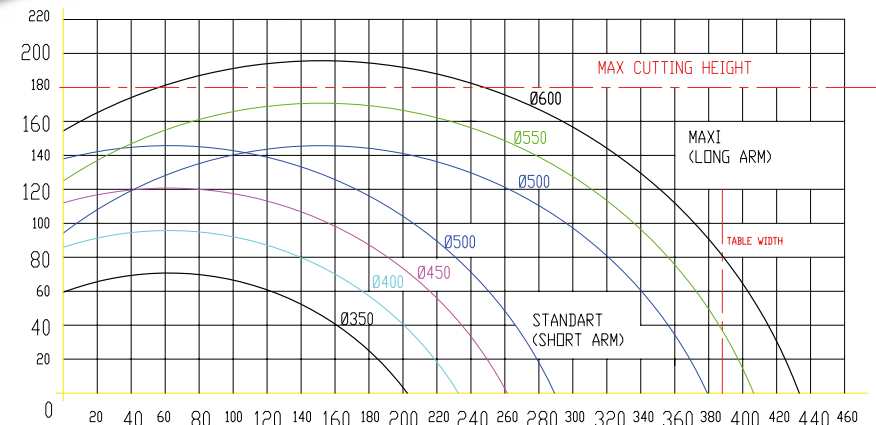
**A saw for optimization** (removing defects) and exact material shortening/cutting. The material (either in individual pieces or in packets) is fed into the saw and positioned by a feeder. Entry and subsequent selection of cutting length is carried out via a touchscreen. The machine is controlled by a powerful industrial computer. High-precision material positioning – up to 0.1 mm (optionally). The machine can be supplied in either a left or right configuration. Two performance lines – STANDARD and QUICK.



## Technical data

- Saw blade  $\varnothing$  350 to  $\varnothing$  600 mm
- Engine power 5.5 kW (7.5 kW, 11 kW, 15 kW options)
- Cut precision  $\pm 0.5$  mm ( $\pm 0.1$  mm optional)
- Feeding speed max. 120 (180) m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 2 x  $\varnothing$  120 mm, 30 m/s
- Operating height 850 mm
- Integrated control panel with touchscreen
- SM OPTIMAL control software
- The length of the feeder table is based on customer requirements 3.2 - 7.2 m (up to 14 m - optional)
- High-precision, long service life
- Power supply 400 V/3/50 Hz

KP 900 EASY CUT OPTIM cutting diagram



## UKS 850/1000/1000 MAX OPTIM

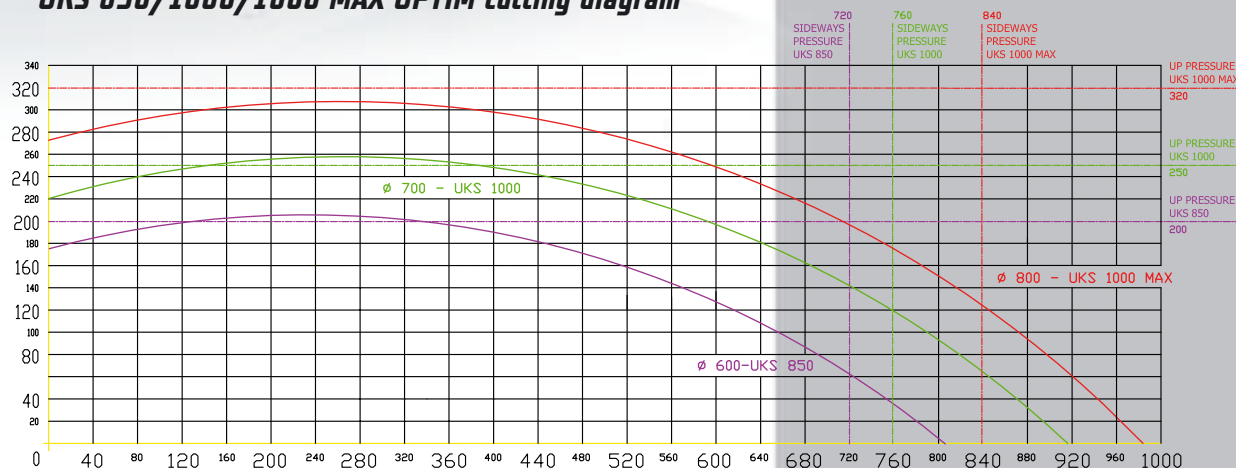
**A high-performance saw for optimization** (removal of defects) and exact shortening/cutting of material with a wide cutting diagram. The material (either in individual pieces or packets) is fed into the saw and positioned by a feeder. Entry and subsequent selection of cutting length is carried out via a touchscreen. The machine is controlled by a powerful industrial computer. High-precision material positioning. The machine can be supplied in either a left or right configuration.



### Technical data

- Saw blade  $\varnothing 600 - \varnothing 800$  mm
- Engine power 11 kW (15 kW, 22 kW)
- Material input precision  $\pm 0.5$  mm ( $\pm 0.1$  mm)
- Material input speed 120 m/min.
- Pressurized air connection 0.8 MPa
- Exhaust 2 x  $\varnothing 120$  mm - 30 m/s
- Operating height 850 mm
- Integrated control panel with touchscreen
- SM OPTIMAL control software
- The length of the feeder table is based on customer requirements 3.2 m - 7.2 m (up to 14 m - optional)
- High precision, long service life
- Power-supply 400 V/3/50 Hz

UKS 850/1000/1000 MAX OPTIM cutting diagram





**1./2./3.** High-capacity cross-cut station KP 900 OPTIM

**4.** Cutting 12 m long material

**5.** Cross-cut saw UKS 1000 OPTIM with an output sorting mechanism

**6.** Exact packet punching





1. KP 500 AUTOMAT with a sorting table and output punchers
2. UKS 700 AUTOMAT with a timber pile dismantler
3. Mirror structure of the UKS 700 OPTIM cross-cut saws with cross and longitudinal material feeding
4. KP 900 EASY CUT OPTIM with an input feeder into the four-side miller
5. Cutting various profiles (plastic, thin-wall steel profiles, ledges, etc.) using KP 500 AUTOMAT
6. KP 500 OPTIM cross-cut station for pallet blank preparation



### Palletizing technology

Let us return to the past and remember when the **idea of using a transport pallet** first surfaced. Generally speaking, pallets are used for making goods handling easier. Nevertheless, not many people know that this need came to life simultaneously with the invention of a handling cart (today called a forklift), i.e. towards the end of the 19th century.

During the first half of the 20th century, palletizing had a great impact on making the handling and transport procedures simpler. The biggest leap in its use occurred during World War II. The United States used pallets for making their transport capacities more efficient and also with the objective of reducing the necessary manpower, which is a very important factor in a war economy. Pallets were used for transporting war material to Europe and to the American Army in the Pacific.

After the war, pallet-based transport undoubtedly became an industrial standard and it has remained so until today. We can thus say that when it comes to goods handling, the pallet **HAS UNIFIED THE WORLD!**

Several small companies that originally began to manufacture pallets often only had very simple tools, such as classic manual hammers, signs were imprinted using gas burners, etc. With an ever growing demand, mechanization was needed, which usually meant purchasing pneumatic nailing hammers and positioning nailing tables. Naturally, further development of the companies focused on looking for options to **increase capacity and reduce production costs, also improving human potential and safety**, which is all related to automatization of the production process.



Our production program mainly focuses on producing and developing palletizing technology. Our specialization covers our customers' requirements, specifically in producing different pallet types with flexible production capacity requirements and in pallet production efficiency.

Our offer satisfies our customers' needs with a range of basic low-capacity machines and production lines up to high-capacity lines. The lines are modular in design in order to match the customer's needs as closely as possible.

#### Low-capacity machines and lines:

**The SMPA 500.2 ED nailing machine** is designed to produce different pallet types. The machine is driven by a unique electro-mechanical system with linear actuators. **The capacity of the nailing machine or a complete line is 500 to 550 pallets per shift (8 hours).** The nailing machine can be used independently to produce pallets or it can be combined with a SMOP after-treatment line or SMPS stacker (see the layout on pages 30 and 31). The line can be assembled with various modifications, depending on the customer's requirements.

#### High-capacity lines:

**High-capacity lines for pallet production SMHC-Line** are produced in two various models. The first line consists of two nailing machines with the option to mechanically reconfigure the line to different pallet types and sizes. The second is a fully universal line with three nailing machines that can be quickly reconfigured using electric engines to different pallet types and sizes. **The line capacity is approximately 2000 pallets (8 hours).** The production line contains an optional SMOP after-treatment line and SMPS pallet stacker (see layout on pages 32 and 33). Low-capacity and high-capacity lines can be assembled with various modifications, depending on the customer's requirements.

## SMPA 500.2 ED

The **SMPA 500.2 ED nailing machine** for pallet production utilizes a modern, robust design with an electro-mechanical system to nail pallets of various type and dimension. The machine is standardly equipped with 26 nailing units (optionally up to 40 units). It works with loose nails and thanks to its electro-mechanical drive has the **lowest power input (1.2 kWh)** in its class. It is a suitable solution for operating units where high-quality and fast pallet nailing is necessary, with high nail pattern productivity and precision.

### Technical data

- The machine can build pallets of various type and dimension according to the template used (2-way pallets, 4-way pallets)
- Maximum pallet dimension (width x length) 1200 x 1500 mm (1500 x 1500 mm without the preparation of legs)
- Minimum pallet dimension (width x length) 700 x 600 mm
- The table can be extended to produce pallets with a maximum length of 2000, 2500 or 3000 mm
- The standard version of the machine is equipped with a universal, adjustable template
- The machine operates with all bulk nails available (l = 27-90 mm), including EPAL nails
- The standard version has 3 boxes with 10 outlets for three types of nail (optionally, it can have a box with 12 outlets, and a fourth box)
- The standard version has 26 hammers (optionally up to 44 hammers)
- Minimum span of nails 25 mm
- Maximum precision tolerance of nailing stroke position  $\pm 1$  mm







## SMPA 500.2 LP ED

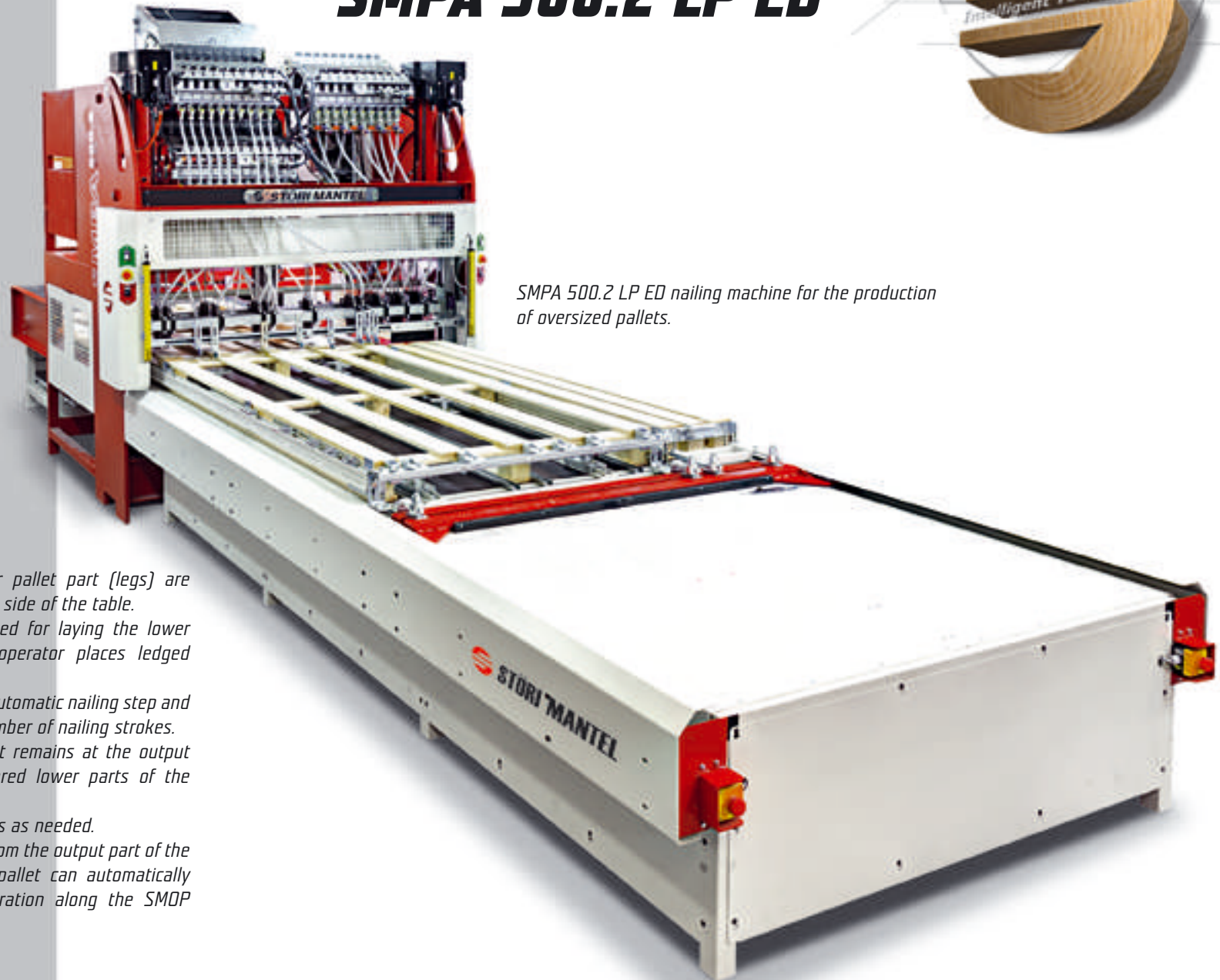
SMPA 500.2 LP ED nailing machine for the production of oversized pallets.

### SMPA 500.2 ED work procedure

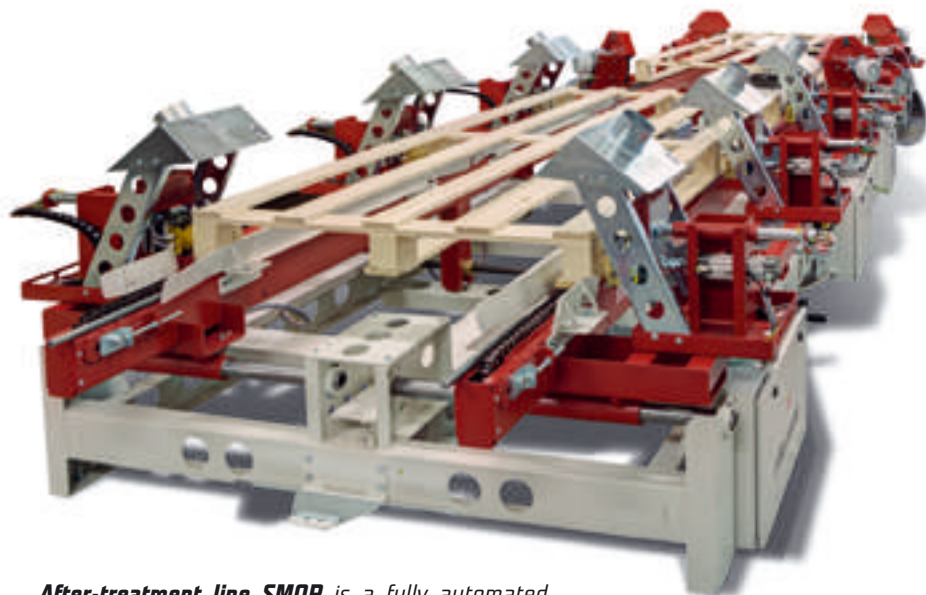
The machine utilizes a system for nailing finished pallets and for leg preparation on a joint table (see picture).

Pallet nailing:

1. Cubes and bottom panels of the lower pallet part (legs) are inserted into the work position on the left side of the table.
2. The machine's right work position is used for laying the lower part of the pallet (legs), where the operator places ledged longitudinal pallet panels.
3. Once inserted, the operator confirms the automatic nailing step and the machine executes the appropriate number of nailing strokes.
4. After the nailing cycle, the finished pallet remains at the output part of the machine and the pre-prepared lower parts of the pallet (legs) return to the start position.
5. The entire cycle is repeated as many times as needed.
6. The operator can collect finished pallets from the output part of the machine manually or, alternatively, the pallet can automatically move to another pallet processing operation along the SMQP and SMPS lines



## ***SMOP after-treatment line***

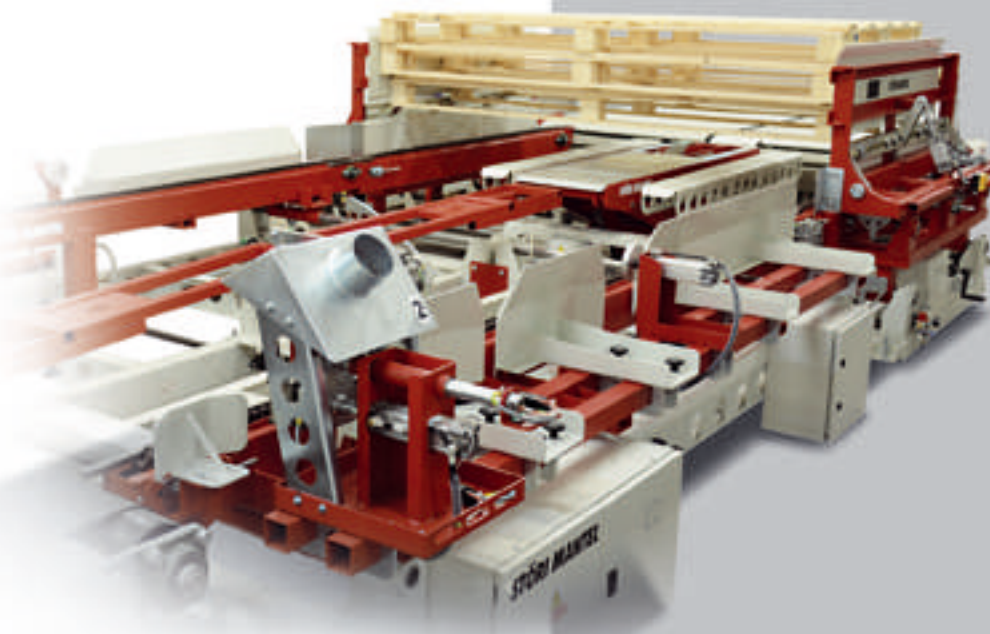


*After-treatment line **SMOP** is a fully automated production line comprising 3 basic parts - **sign burner, corner cutter, longitudinal edge miller**. The machine can operate separately or be part of a production line after an **SMPA 500.2 ED** nailing machine.*

*The **SMPS pallet stacker** can stack pallets for additional pallet handling. The stacker allows simple stacking or interlocked stacking. The stacker should be used after an **SMPA 500.2 ED** nailing machine or an **SMOP** after-treatment line.*

*The **SMOP** and **SMPS** lines are produced in the **FIX** configuration - for pallets up to 800 x 1200 mm, or the **UNI** configuration - for pallets up to 1200 x 1500 mm (1200 x 3000 mm option).*

## ***SMPS pallet stacker***







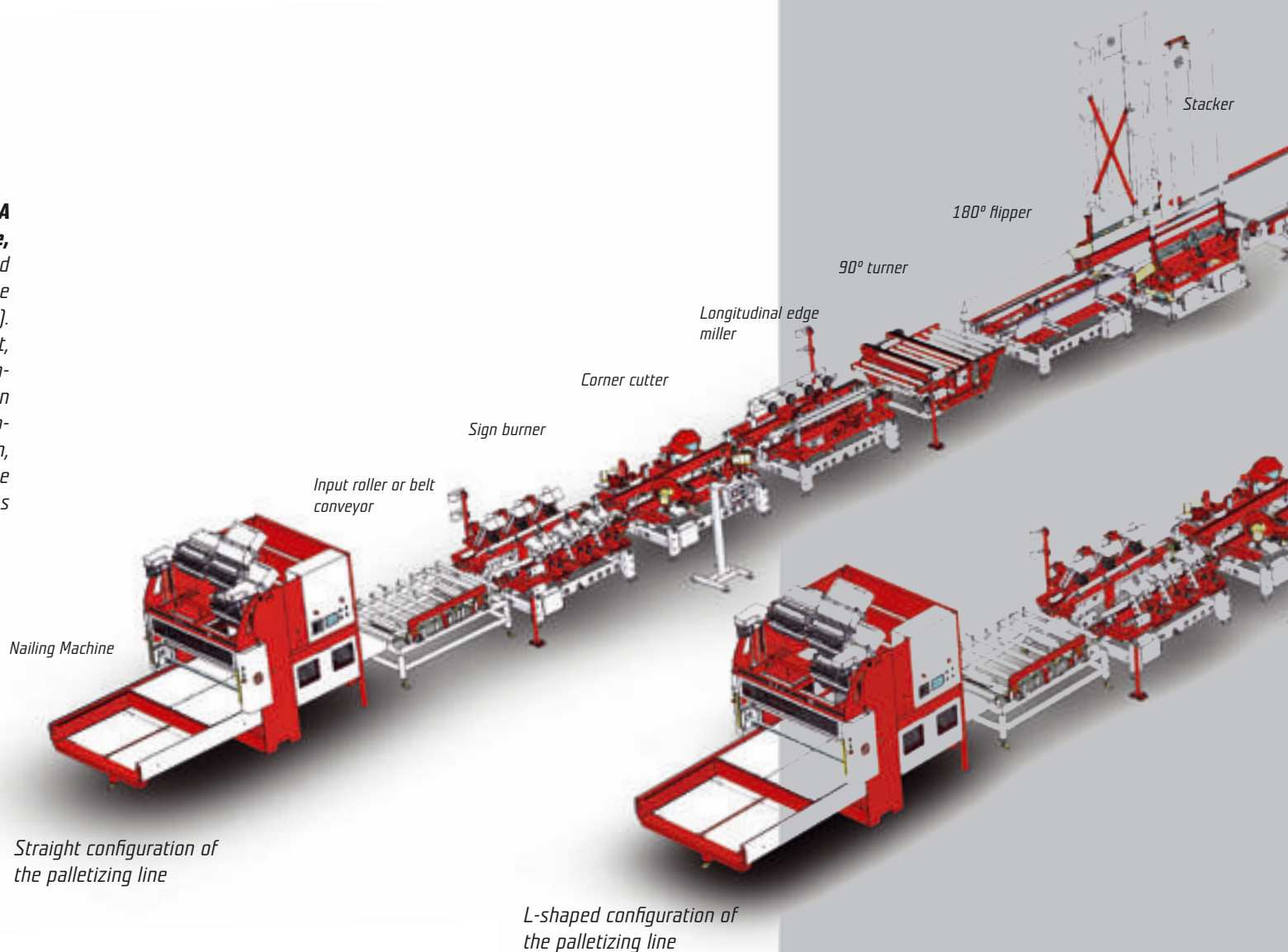
1. Parallel placement of nailing units on the production line (flexibility)
2. SMPA 500.1 ED with extended feeding table
3. Turning large pallets
4. Automatic machine for branding bricks
5. Let's go ...
6. ... and it is DONE!



# Palletizing line configuration options

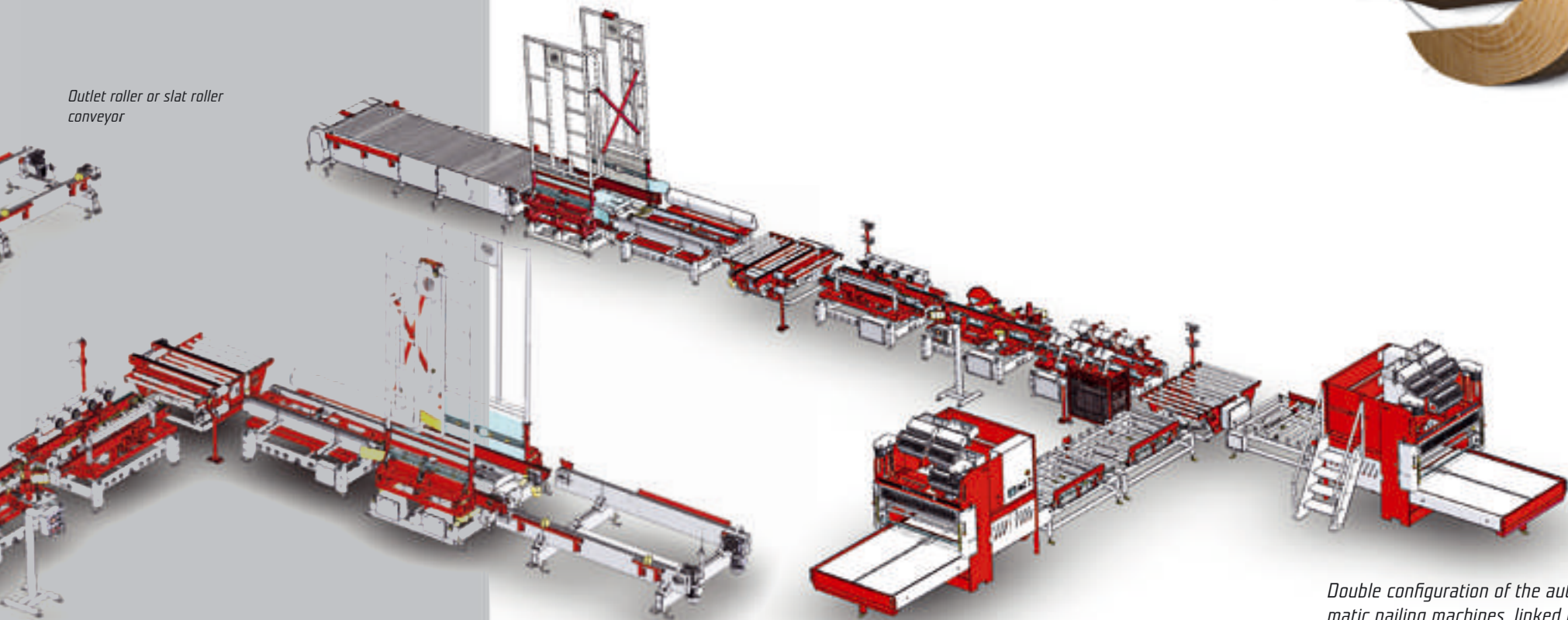
## Palletizing line configuration options

The palletizing line comprises a powerful **SMPA nailing automat**, **SMOP pallet processing line**, **SMPS stacker**, and **outlet roller conveyor**. Based on a given production hall layout, the line can be configured to various shapes (straight, L, or U). To achieve greater flexibility and power output, a double setup of automatic nailing machines linked to the corresponding pallet processing line can be implemented. The connection of individual production line sections is implemented using chain, roller, or belt conveyors. For the output part of the line (stack collection), we offer appropriate lengths in the form of chain or slat conveyors.





*Outlet roller or slat roller conveyor*



*Double configuration of the automatic nailing machines, linked to the pallet processing line*

# SMHC-Line high

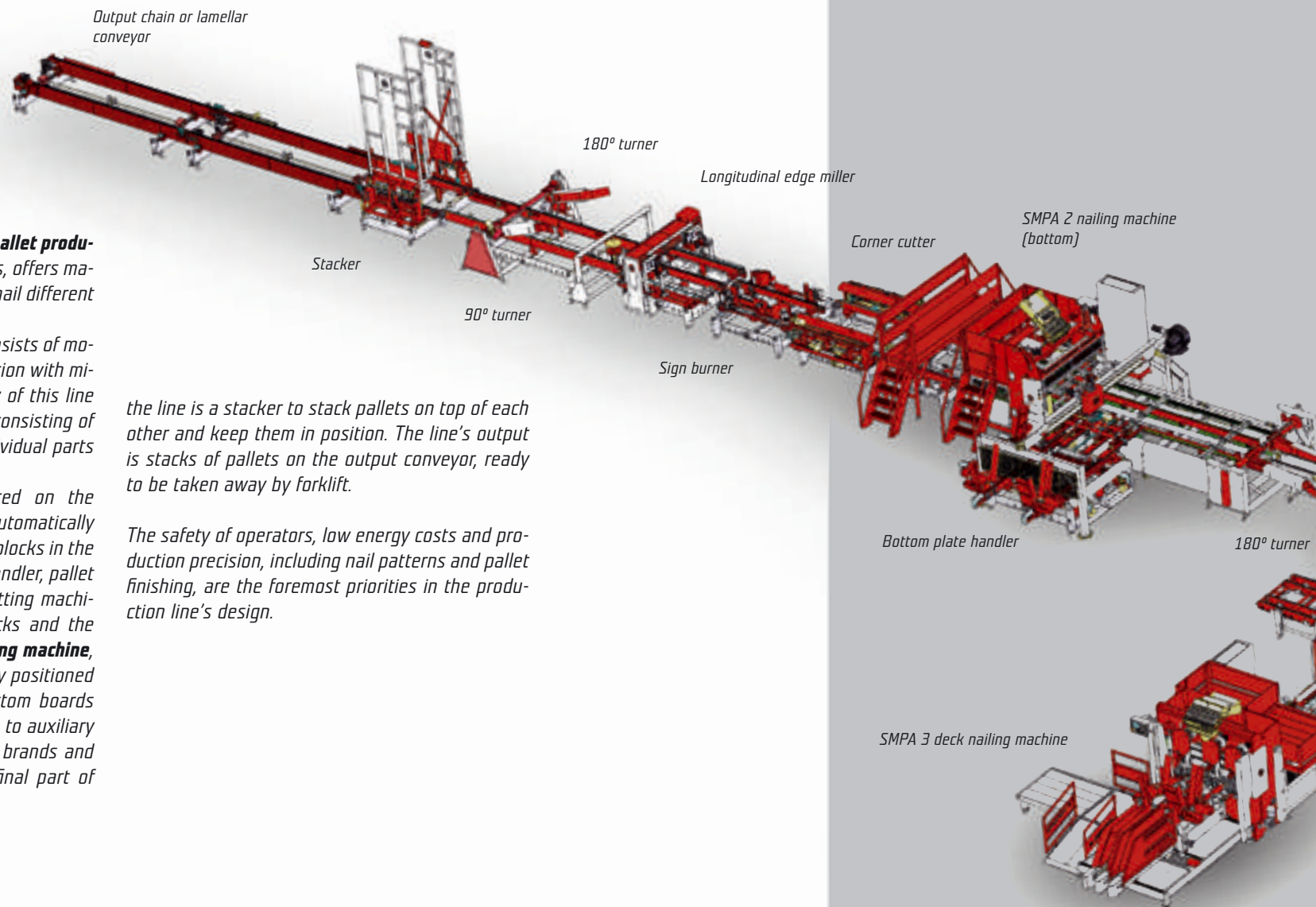
**The SMHC-Line high-capacity line for pallet production** consists of three nailing machines, offers maximum universality and is designed to nail different pallet types and sizes.

The complete line of full equipment consists of modules that allow efficient pallet production with minimum line operation. The universality of this line is achieved through its configuration, consisting of three nailing machines to produce individual parts of the pallet.

First, the top deckboard is produced on the **SMPA 3 deck nailing machine** and automatically manipulated and arranged onto pallet blocks in the **SMPA 1 machine**. Using the vacuum handler, pallet blocks are supplied from the block cutting machine. The deck is attached to the blocks and the pallet then moves to the **SMPA 2 nailing machine**, where bottom boards are automatically positioned by the vacuum handler. After the bottom boards are attached, the pallet leaves the line to auxiliary machines for cutting edges, stamping brands and chamfering the bottom boards. The final part of

the line is a stacker to stack pallets on top of each other and keep them in position. The line's output is stacks of pallets on the output conveyor, ready to be taken away by forklift.

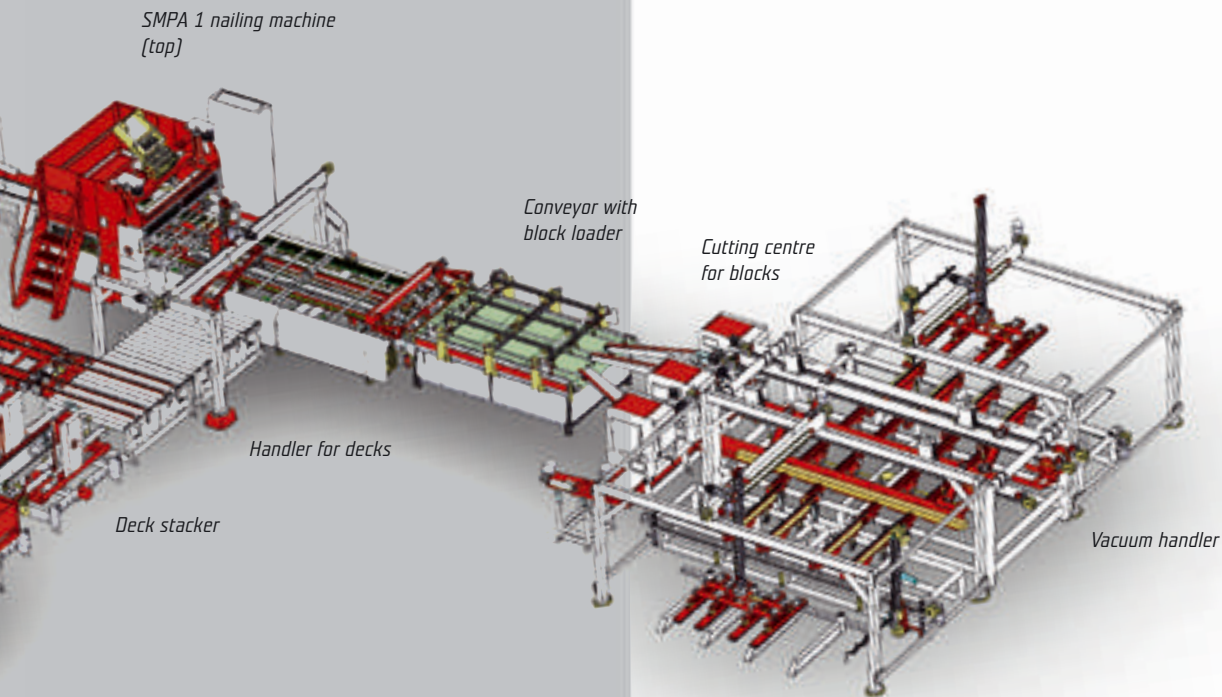
The safety of operators, low energy costs and production precision, including nail patterns and pallet finishing, are the foremost priorities in the production line's design.







# capacity line for pallet production



## Technical data

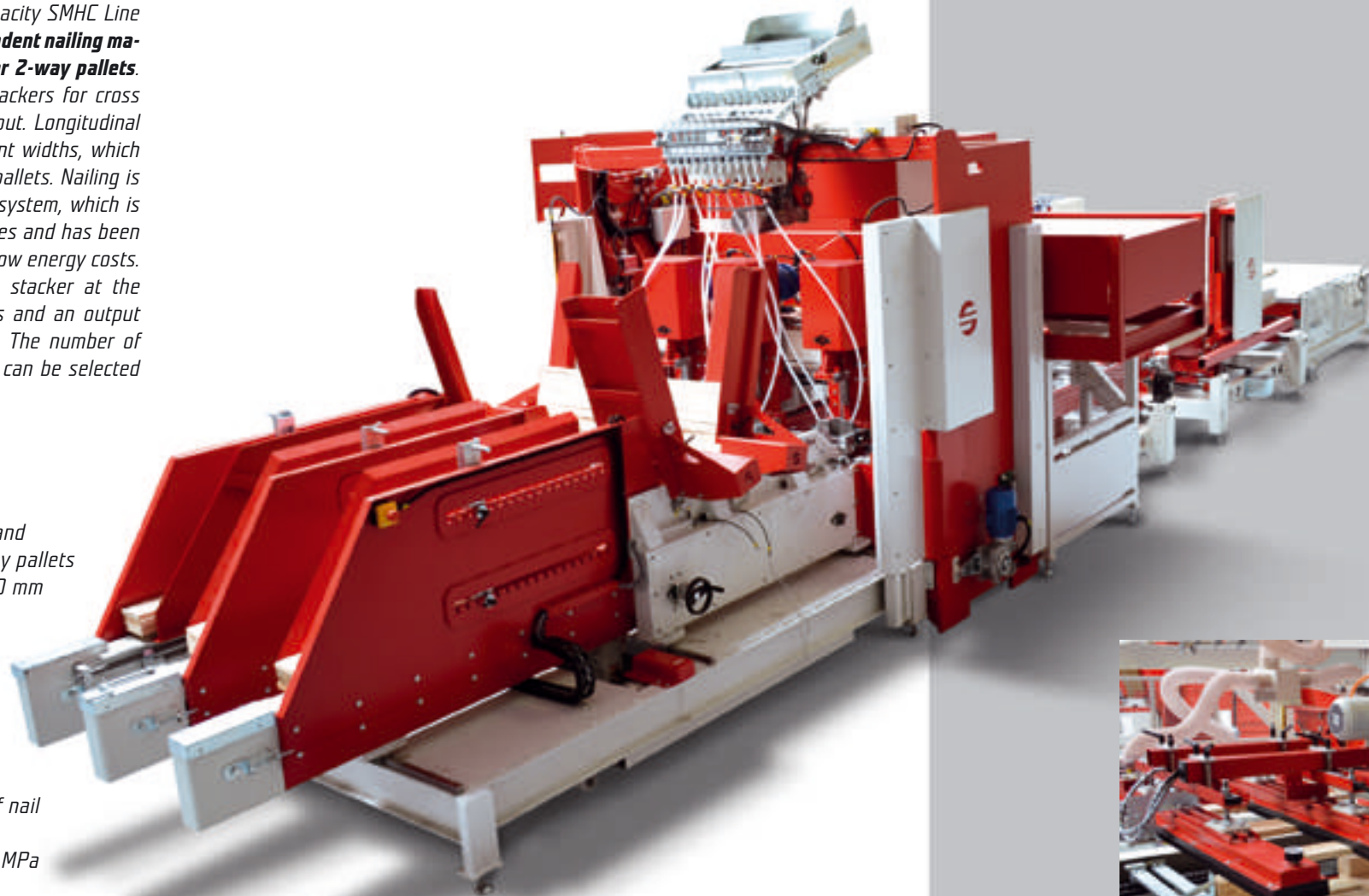
- The line nails different pallet types and sizes (2-way, 4-way pallets)
- Max. pallet size 1 500 x 1 500 mm
- Min. pallet size 700 x 700 mm
- The line works with all available bulk nails (l = 27 – 90 mm), including EPAL nails
- Min. spacing of nails is 25 mm
- Tolerance of max. precision of the nail striking position +/- 1 mm
- Suction 9 x 100 mm
- Required suction speed 25–30 m/s
- Compressed air connector 0.8 MPa
- Power supply 400 V/3/50 Hz

## SMPA 3 - deck nailing machine

*The **SMPA 3 deck nailing machine** is included as a standard device in the high-capacity SMHC Line but can also be used as an **independent nailing machine to nail pallet deck boards or 2-way pallets**. The machine is equipped with stackers for cross and longitudinal boards at the input. Longitudinal boards can only have two different widths, which is standard, for example, in EUR pallets. Nailing is done using an electromechanical system, which is typical for all Störi Mantel machines and has been commended for its reliability and low energy costs. The machine can also include a stacker at the output for deck boards or pallets and an output conveyor for transporting stacks. The number of deck boards or pallets in a stack can be selected by the customer.*

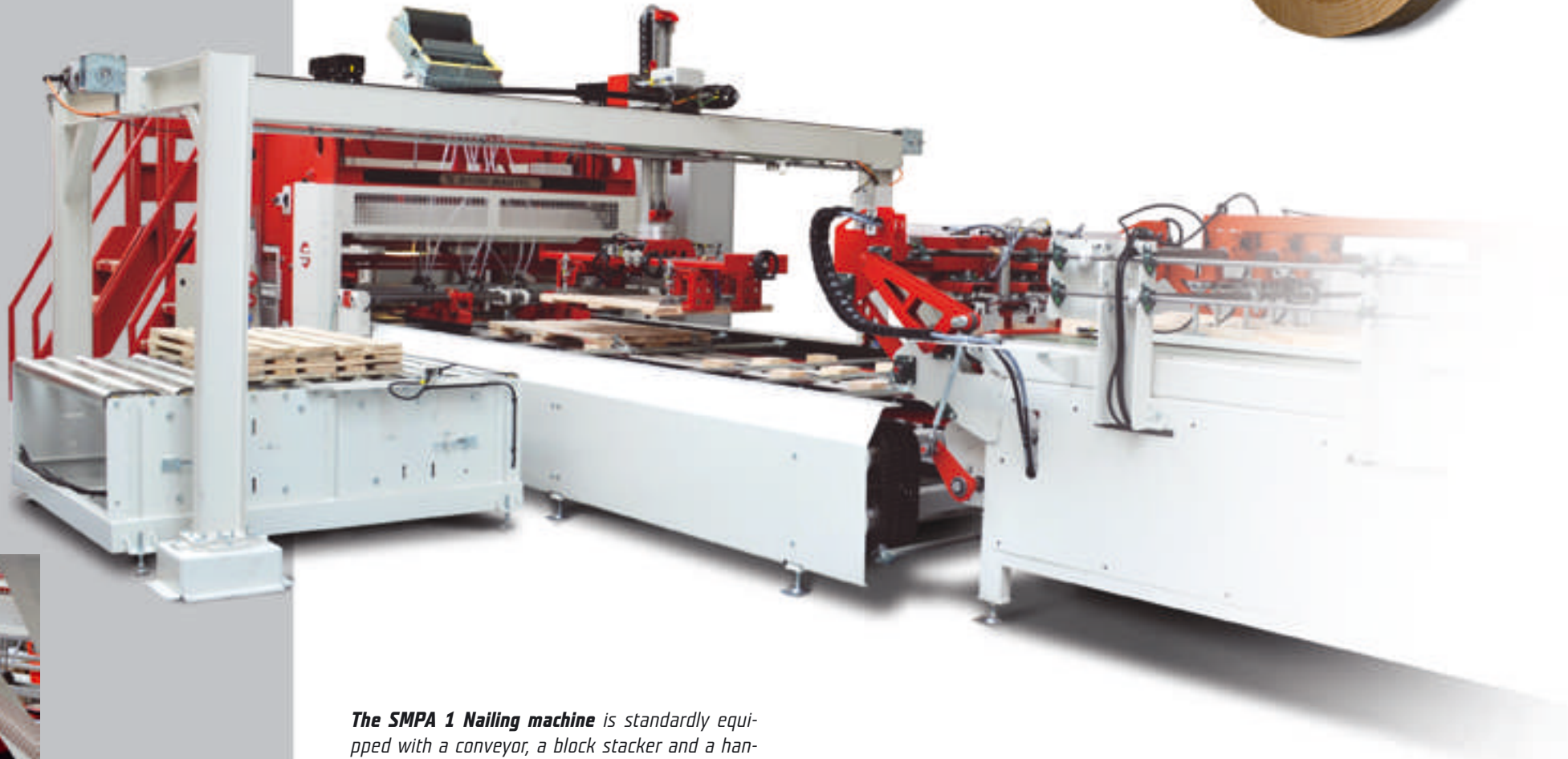
### Technical data

- Machine nails different types and dimensions of decks and 2-way pallets
- Max. pallet size 1 500 x 1 500 mm
- Min. pallet size 700 x 700 mm
- The machine works with all available bulk nails ( $l = 27\text{--}40\text{ mm}$ ), including EPAL nails
- Min. spacing of nails is 25 mm
- Tolerance for max. precision of nail striking position  $\pm 1\text{ mm}$
- Compressed air connector 0.8 MPa
- Power supply 400 V/3/50 Hz





# ***SMPA 1 - nailing machine with deck manipulator***



*SMPT 2 - detail on a nailing machine with bottom board manipulator*

*The **SMPA 1 Nailing machine** is standardly equipped with a conveyor, a block stacker and a handler to load deck boards. In a high-capacity line, this machine nails the upper deck board to blocks supplied from continuously running conveyors to the nailing machine.*

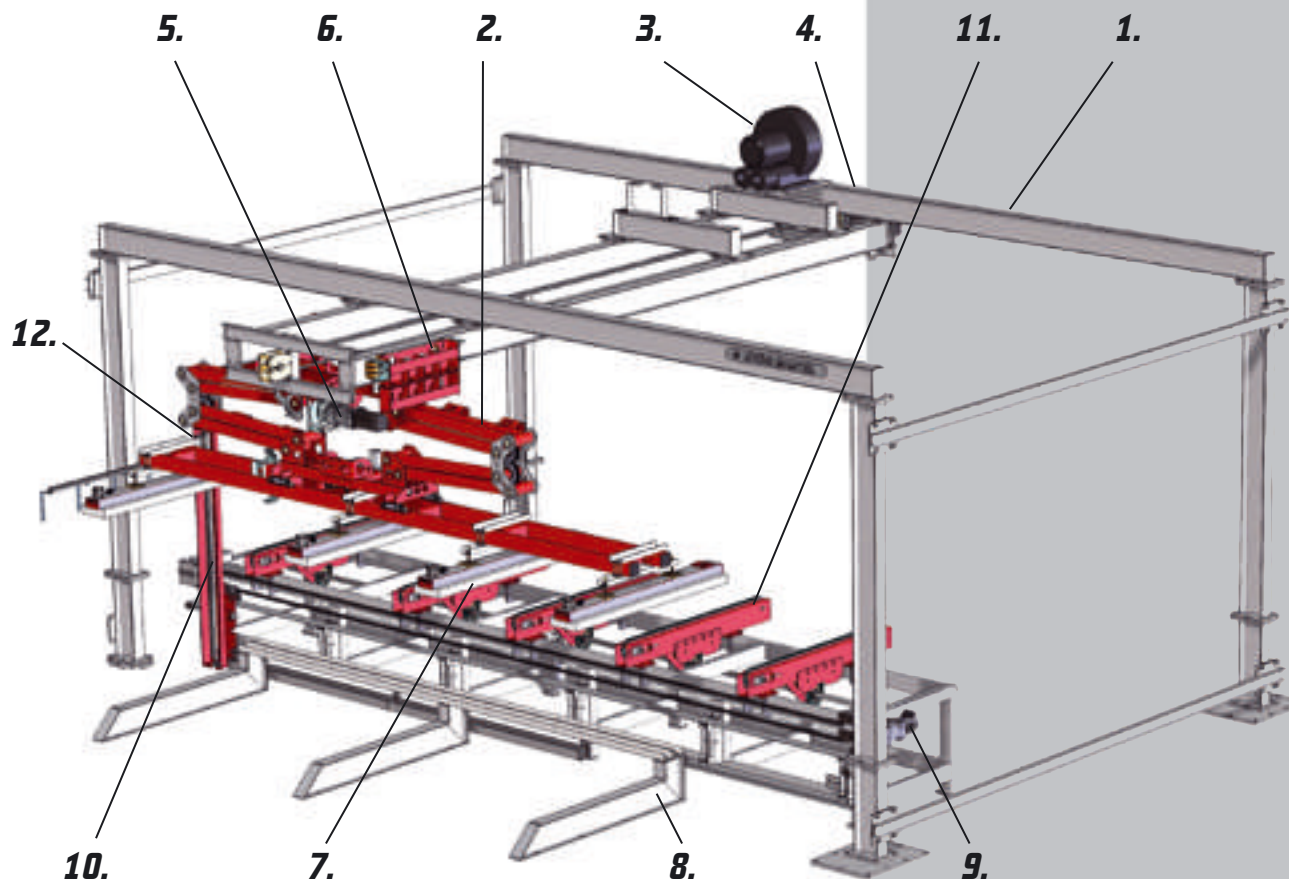


## SM-VM 01 vacuum handler

The **SM-VM 01 vacuum handler** is designed for operations wherever timber pile material needs to be automatically moved to next operation. Material in the timber pile can be interspersed with stabilization crossers or crossers within each layer. The handler is equipped with a system of large-surface vacuum suction pads for moving individual material layers to the input conveyor. The conveyor can include a device for individual packet separation.

### Technical data

- Engine power 5 - 15 kWh, based on the weight of the handled material
- Power supply 400V/3/50 Hz
- Very safe, long lifespan



1. Load-bearing frame
2. Handler lifting mechanism
3. Vacuum pump
4. Handler moving drive
5. Handler lifting drive
6. Sliding portal
7. Negative pressure suction pads
8. Booms for the handled material
9. Cap scraper sliding drive
10. Cap scraper portal
11. Transverse chain conveyor
12. Cap scraper lifting drive



*Vacuum handler with a cap scraper for the KP 900 EASY CUT OPTIM machine.*

## WST 1200 packet turner



*The WST 1200 packet turner is designed for flipping slab, panel, and veneer packets. It can be used anywhere where drying is needed and wherever materials need to acclimatize after drying. **The device is designed to eliminate the hard physical work of moving materials.** Using forklifts, material packets are inserted into the frame of the turner. The packet is subsequently gripped between arms using a hydraulic system and flipped by 180°. Once flipped, the arms release and the packet can be collected again using a forklift.*

### **Technical data**

- Maximum packet length 3000 mm
- Maximum packet height 1200 mm
- Maximum packet width 1200 mm
- Engine power 6 kWh
- Power supply 400V/3/50 Hz
- Very safe, long lifespan

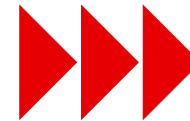
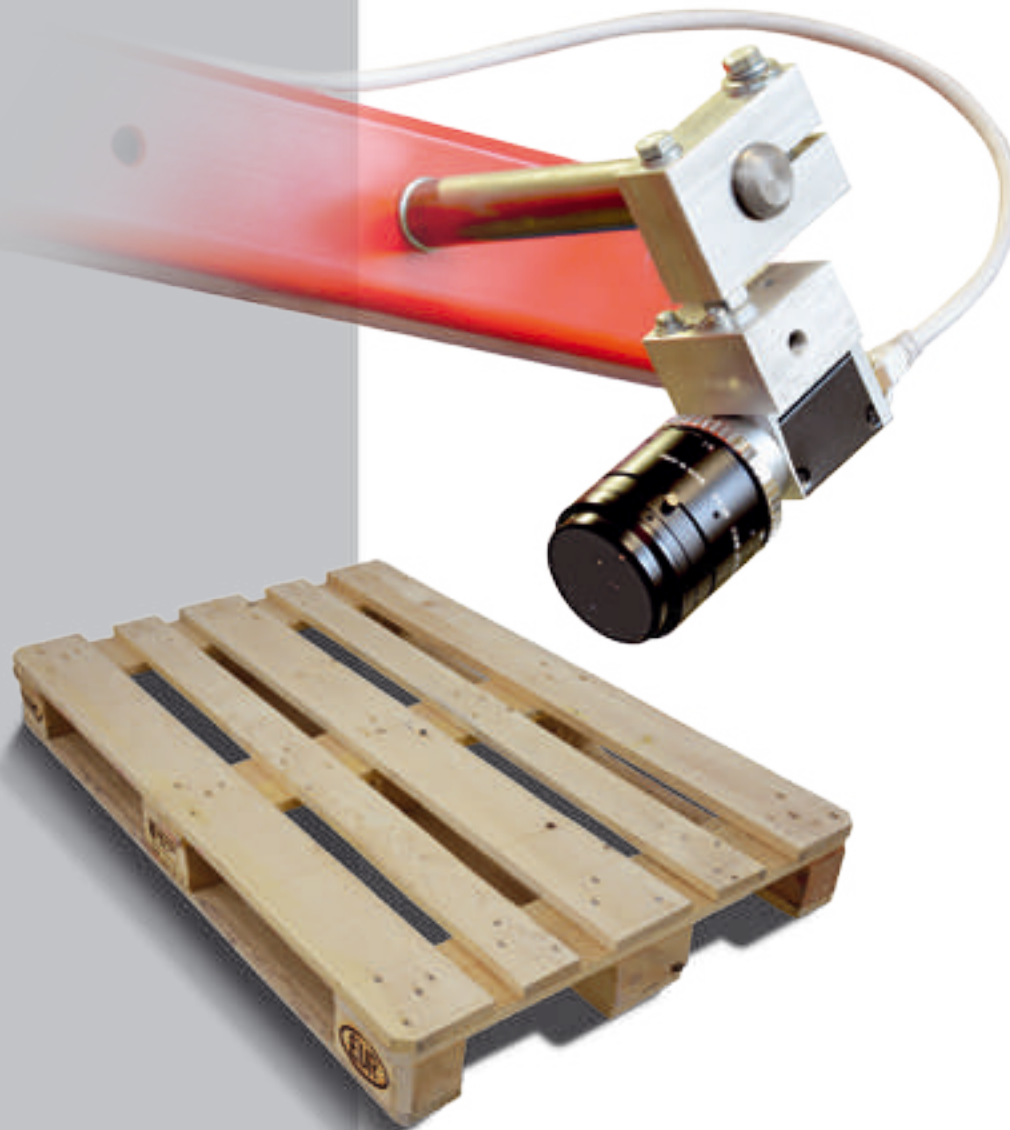
**1.****2.**

**1./2.** Packet turner testing





## Quality control of nailing



***In 2019, our customers can look forward to a great innovation that uses a camera system with artificial intelligence for quality control. Sometimes, a nail may not be driven incorrectly when done automatically. The camera system continuously scans the line and analyses the image with its software. It uses artificial intelligence algorithms similar to those used in self-driving cars to detect pedestrians, cars and other road users. In this case, the software has been taught to inspect the assembled/nailed pallet (search for anomalies, such as protruding nails and other defective conditions). If a defective condition is discovered, operators are notified with lights and acoustic signals.***

*The system thereby provides extra quality control.*



**STÖRI MANTEL**

**Contact:**

**Störi Mantel s.r.o.**

production of woodworking machines

**Industrial site:**

U Trati 2620, 756 61 Rožnov p. R.

**Postal address:**

CZ-756 51 Zašová 439

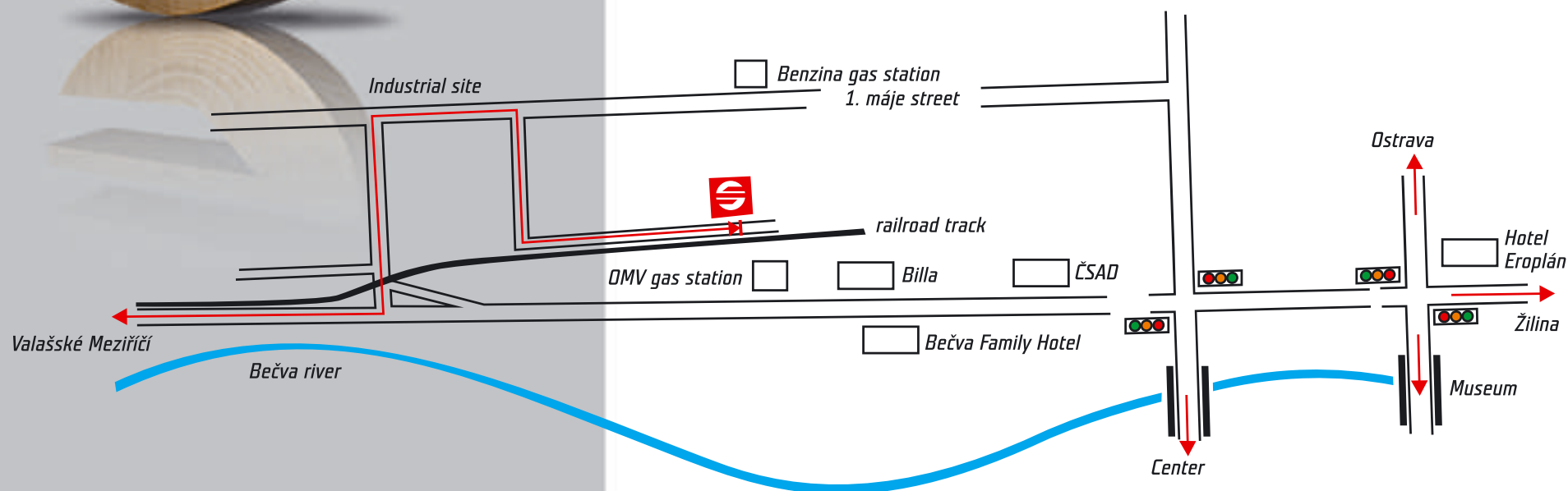
tel: +420 571 603 774

fax: +420 571 604 183

e-mail: [info@stoerimantel.com](mailto:info@stoerimantel.com)

[www.stoerimantel.com](http://www.stoerimantel.com)

## Rožnov pod Radhoštěm



For more information [www.stoerimantel.com](http://www.stoerimantel.com)

Producer has the right to make changes.  
We are not responsible for printing errors.