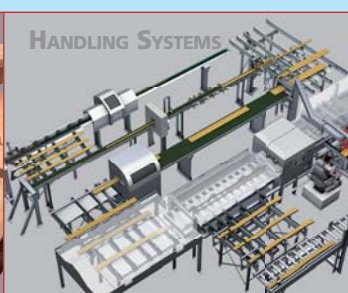
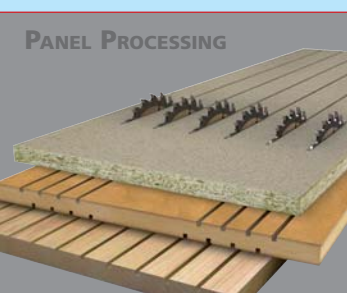


■ made
■ in
■ Germany

Paul
Maschinenfabrik GmbH & Co. KG



CNC Cross-Cut Systems Series C14 II



C14 II – ROBUST AND POWERFUL

The C14 II is designed for cutting medium-sized to large cross sections for use in the industrial timber processing sector. It is suitable for heavy and difficult workpieces where high demands are placed on production speed and accuracy. Outstanding productivity is achieved by the high feed speed, the rapid sawing action and the quick acceleration characteristic of the C14 II series. Combined with state-of-the-art control technology, the reliable cross-cut systems ensure profitable operation.

The heavy-duty design with a distortion-free machine frame made of 30 mm thick steel plates, the overdimensioned bearings and guide elements, a heavy-duty saw rocker with widely spaced bearings, etc. guarantee reliable continuous operation, maximum uptime and a long life for the system.

Automatic defect identification systems, such as the PAUL wood scanning system turn the C14 into a

high-efficiency cross-cut system for use in the modern timber industry.

Optimally coordinated handling components along with intelligent control technology result in a processing system that meets the highest demands. Customers benefit from PAUL's long years of extensive system expertise.

Fig. 1: C14_MKL II with manual marking station and MAXI 6 PREMIUM control





Fig. 2: C14 II in operation



	C14_E II	C14_KE II	C14_MKL II
Partial optimization	•	•	•
Defect cutting with luminescent scanner		•	•
Full optimization	• ¹⁾		•
Separate measuring station for quality and value optimization			•

1) With auto infeed length identification (option)

MODEL C14_MKL II

Maximum increase in value, optimum length combinations and minimum waste is achieved on the top-of-the-range model **C14_MKL II**. Workpiece measurement in a separate measuring station allows to make full use of all optimization features.

The sensors protected under the tilting hood of the measuring station accurately detect the workpiece

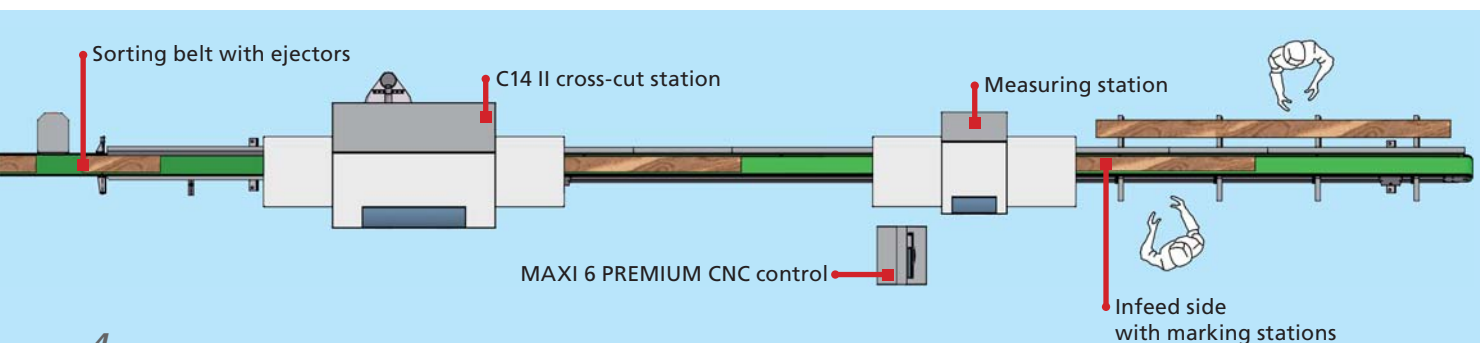
length and crayon mark locations (optionally also workpiece width and thickness). From this data the MAXI 6 CNC control calculates the optimum cutting pattern within split seconds.

Value optimization calculates the optimum combination of preset component and finger-joint lengths with up to 8 different timber grades.

Combined with an automatic feeding system, the C14_MKL II achieves its maximum performance and greatest flexibility with a low manpower requirement. The automatic defect and quality identification feature ensures fully automatic operation of this cross-cut line.



Fig. 3: The top model C14_MKL II with measuring station



MODELS C14_E II AND C14_KE II

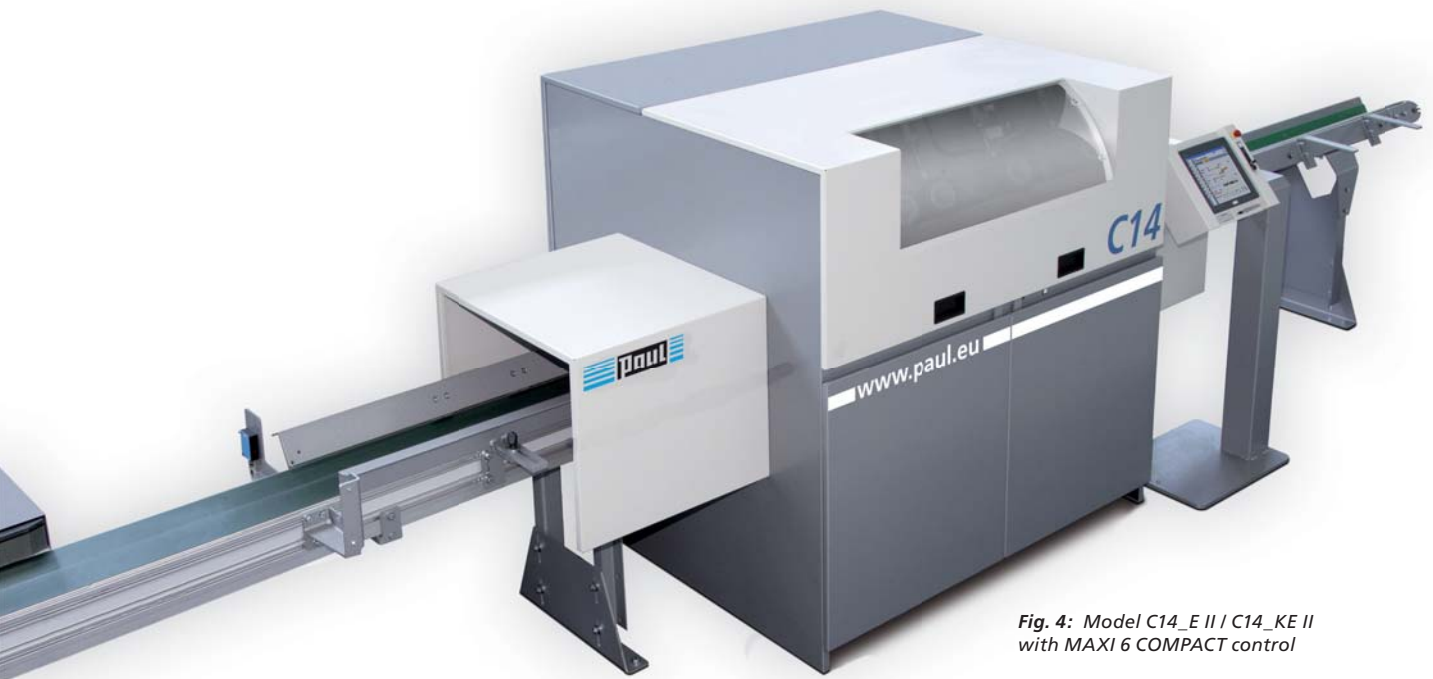
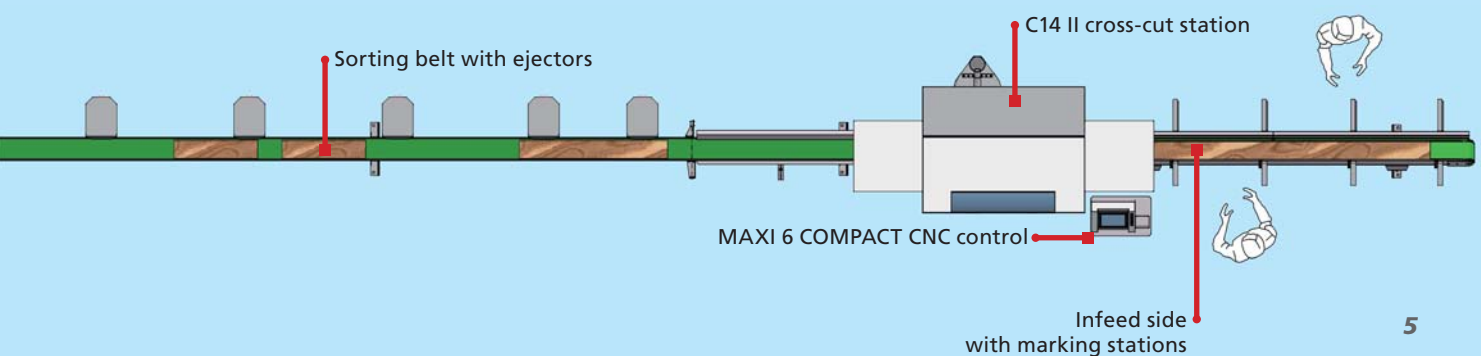


Fig. 4: Model C14_E II / C14_KE II with MAXI 6 COMPACT control

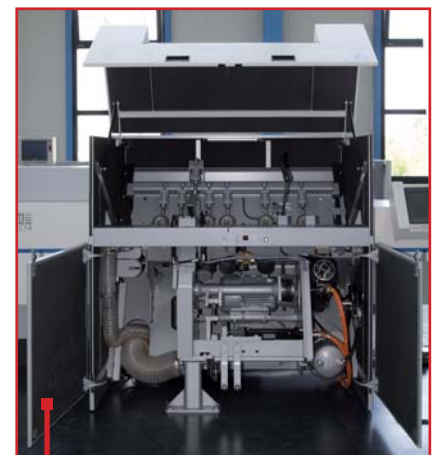
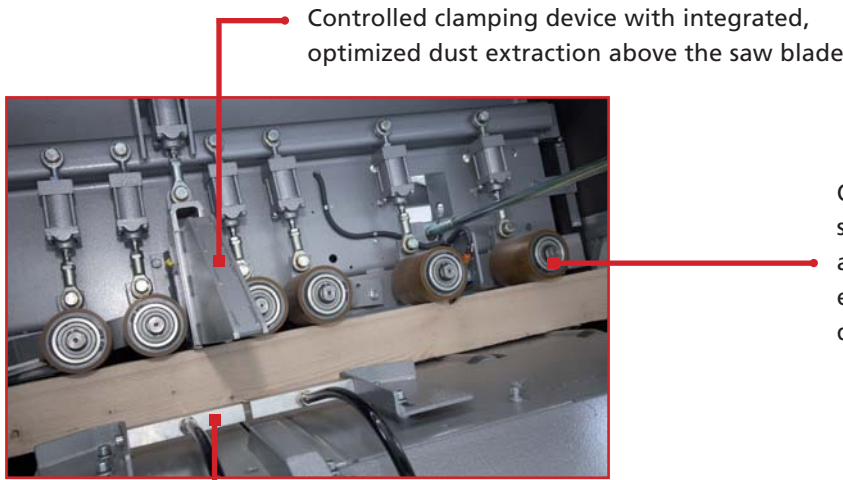
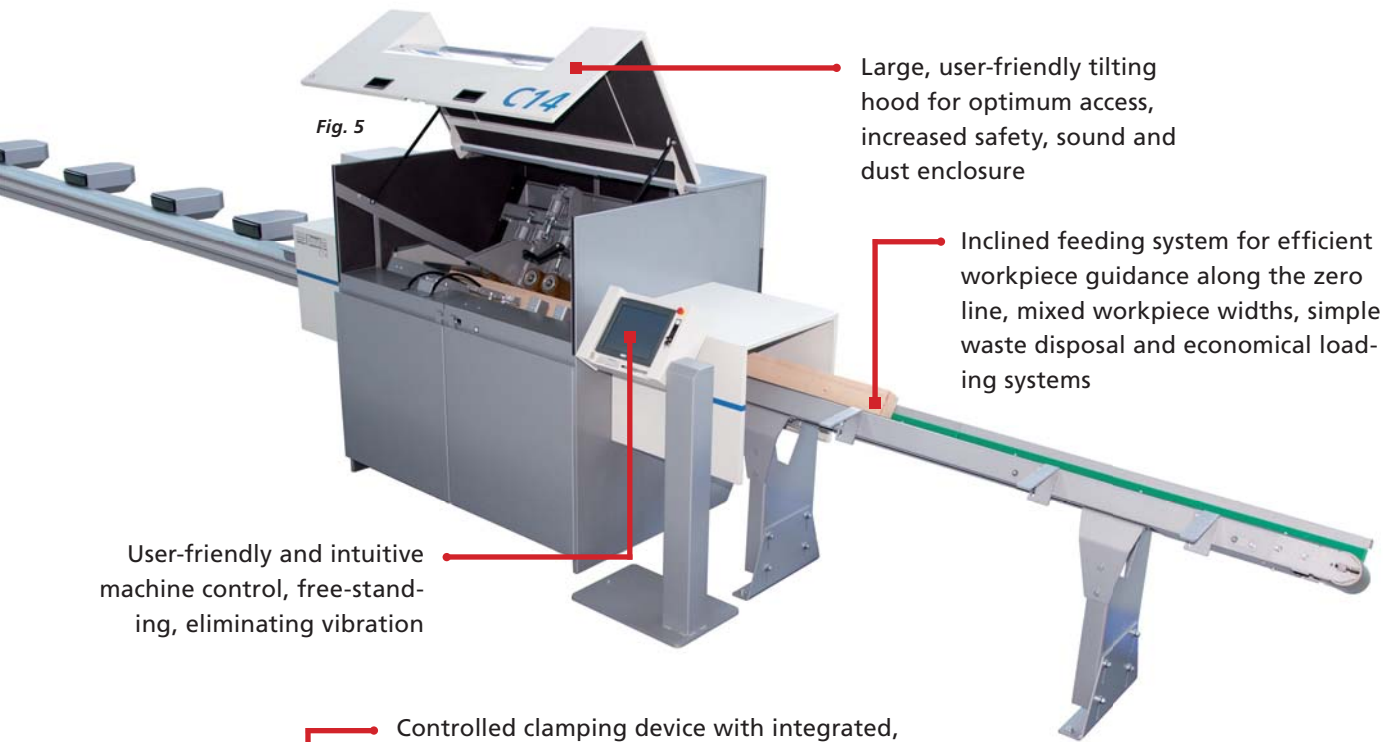
Model **C14_E II** is ideally suitable for high-volume length cutting where no defects or unwanted wood characteristics are to be cut out. The easy-to-program cutting lists are processed in the partial optimization mode based on the required production data. With an optional

automatic infeed length identification, the C14_E II, the smallest model in the series, can also be used for full optimization. An excellent overview of the production status from the office is provided via the integrated online connection.

Model **C14_KE II** is additionally equipped with a luminescent scanner for reading crayon-marked defects or different timber grades marked by code lines.



C14 II IN DETAIL



In addition, there are numerous options available to further increase the efficiency and flexibility of the C14 II series:

- Servo-controlled cutting stroke (standard is a pneumatic cutting stroke)
- Width and thickness measurement
- Electric top roller height adjustment
- Auto-controlled top rollers for varying workpiece dimensions
- Wide belt conveyors

OPERATION AND AUTOMATION

▶ CONTROL ENGINEERING MADE BY PAUL



Fig. 8: MAXI 6 PREMIUM operating terminal

For several decades PAUL has developed its CNC controls in-house in order to keep complete control over functionality and maintenance of the systems. User friendliness and flexibility based on customers' requirements and our many years of experience have been achieved through the PAUL CNC controls.

The C14 II series cross-cut systems are available with MAXI 6 PREMIUM or MAXI 6 COMPACT controls which are distinguished by the following features:

- **Graphic user interface** in the user's language, with touch panel for ease of operation
- Efficient, reliable and fast **LINUX operating system**. The network capability offers a series of functions with scope to further improve effectiveness for the customer.

- Connection of machine components via the standardized **Ether-CAT bus system**
- Industrial PC with high-performance multi-core processor

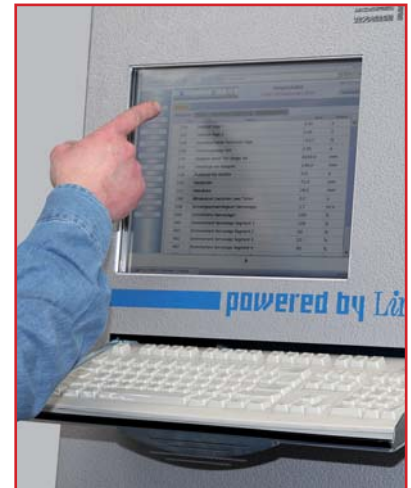


Fig. 9: Input on the touch panel

▶ PAUL WOOD SCANNING SYSTEM

The C14 II cross-cut systems can be equipped with fully automatic scanners of renowned scanner manufacturers or with PAUL's own wood scanning system.

The PAUL Wood Scanning System detects surface defects, workpiece contours and wood characteristics in a cost-effective manner. With a fast, accurate and consistent workpiece inspection, different quality zones are determined precisely and fully automatically. Its simple construction and user-friendly software

functions ensure low operating costs and maximum equipment uptime.

On passing through the scanner all four faces of the workpieces are detected quickly and accurately by means of different methods. From

the data acquired the optimization software calculates the cross section, board geometry and the different quality zones of the workpiece. The optimization result is transmitted by the scanner software to the CNC control of the cross-cut station.



Fig. 10: PAUL Wood Scanning System with integrated operating terminal

TECHNICAL OVERVIEW

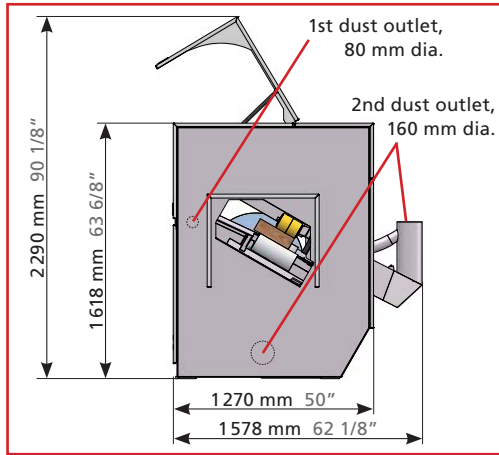


Fig. 11: Side view of C14 II cross-cut station

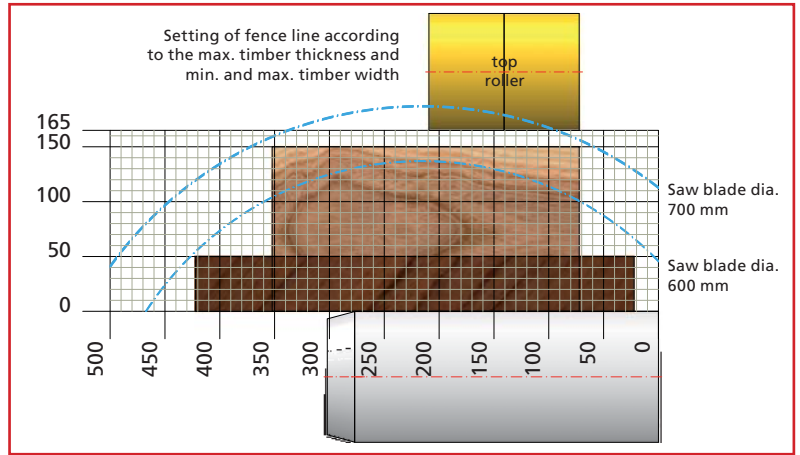


Fig. 12: Cutting diagram

TECHNICAL DATA

Saw motor (option)	[kW]	7.5 (11)
Powered bottom rollers		6
Rubber-coated top rollers		6
Max. feed speed	[m/min.]	300
Saw blade diameter (option)	[mm]	600 (max. 700)
Speed of saw blade (option)	[rpm]	3600 (3000)
Dust outlet diameter	[mm]	2 x 160 and 1 x 80
Min. dust extraction requirement (25 m/s)	[m ³ /h]	4 100
Sound pressure level at workplace ¹⁾	no load	[dB(A)] 80-84
	operation	[dB(A)] 82-87
Weight (only cross-cut station)	[kg]	1600

1) with 600 mm ø saw blade

WORKPIECE DATA

Min. infeed length	[mm]	600
Max. infeed length	[mm]	depending on design
Timber thickness (with 700 mm ø saw blade)	[mm]	20 ²⁾ -100 (150)
Timber width (with 700 mm ø saw blade)	[mm]	40 ²⁾ -250 (400)
Timber cross sections	[mm]	see cutting diagram
Min. cut length (at board end)	[mm]	140 ²⁾ (180)
Max. timber weight (option)	[kg]	70 (on inquiry)

2) on inquiry less

ACCESSORIES

- Automatic vacuum destacking systems
- Handling and buffer feeding systems
- Distribution systems to several cross-cut lines
- Auto stackers
- Width and thickness measurement using the triangulation measuring method
- Ink-jet printers and labelling systems for letter or colour code printing on top or bottom face and/or end face of the cut pieces
- Auto length correction system for the accurate cutting of long lengths
- Safeguard system
- Length sorting system



Fig. 13: Stacking system comprising four auto stackers and a powered roller conveyor for the removal of finished stacks

Fig. 14: Automatic destacking system

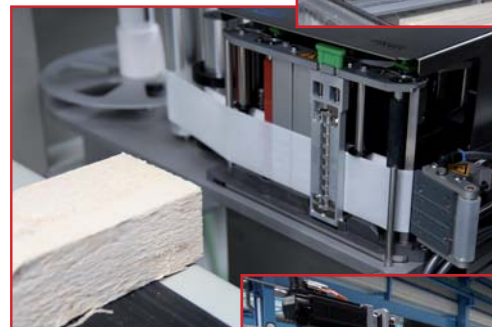


Fig. 15: Labelling system



Fig. 16: Distribution to two cross-cut stations



Fig. 17: Sorting conveyor with ejectors

CUSTOMIZED PACKAGE SOLUTIONS

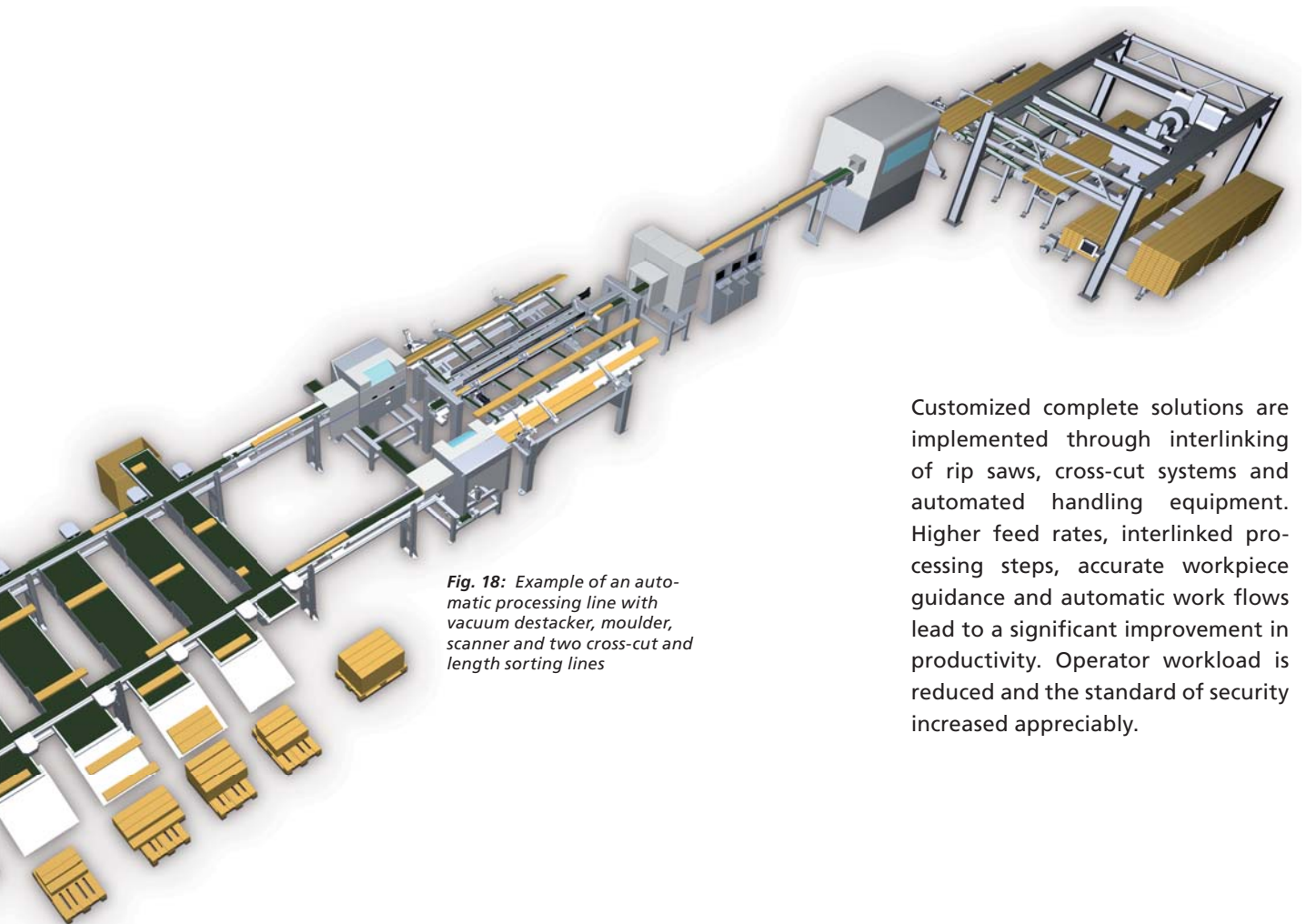
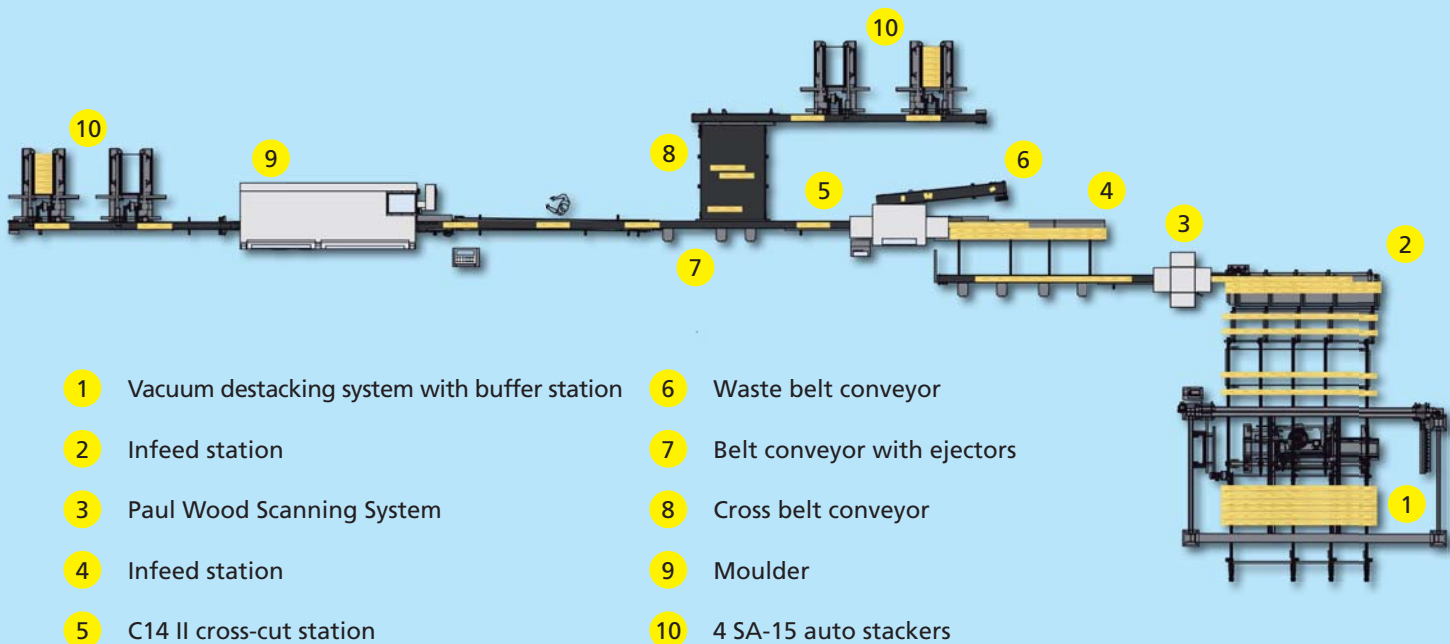


Fig. 18: Example of an automatic processing line with vacuum destacker, moulder, scanner and two cross-cut and length sorting lines

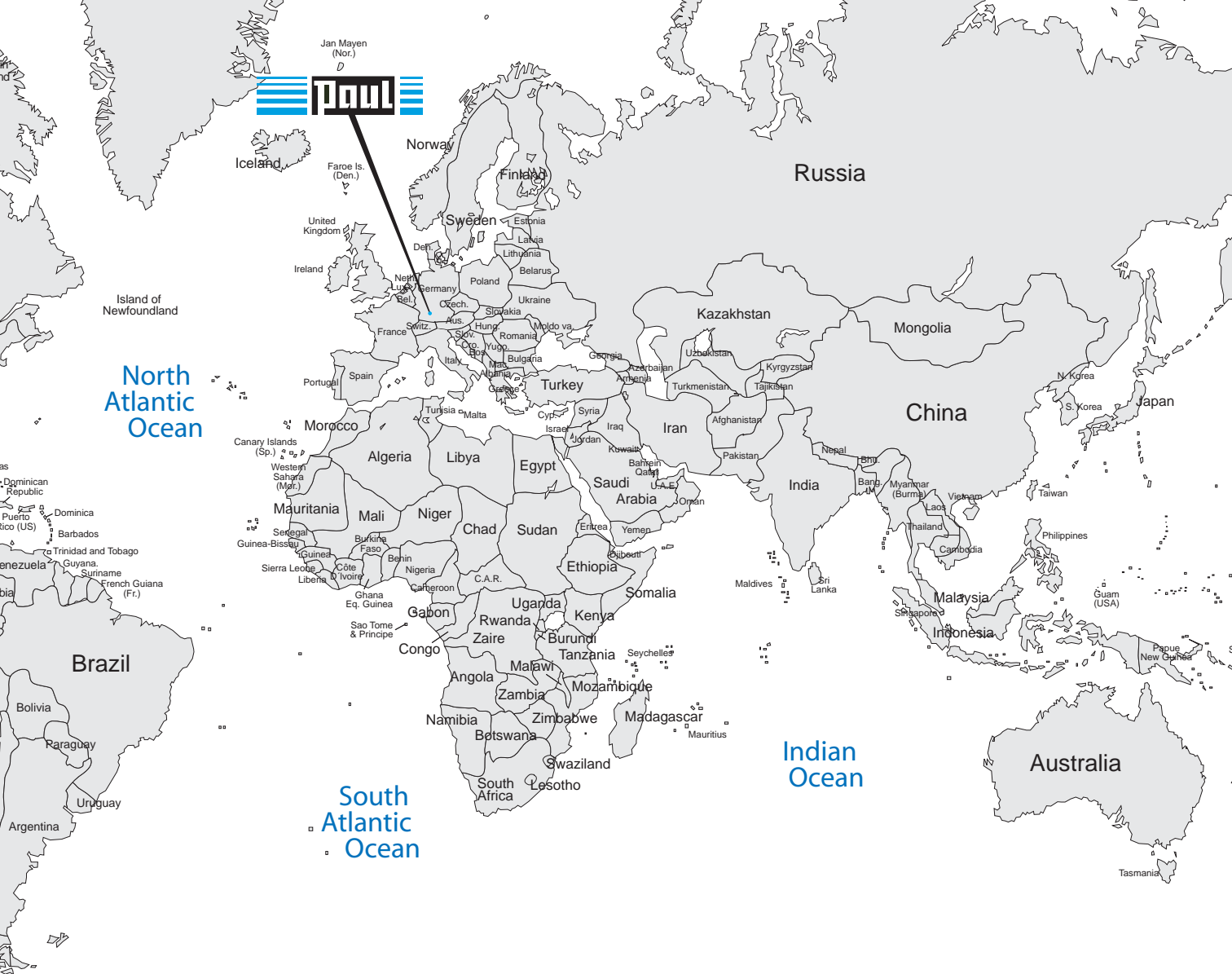
Customized complete solutions are implemented through interlinking of rip saws, cross-cut systems and automated handling equipment. Higher feed rates, interlinked processing steps, accurate workpiece guidance and automatic work flows lead to a significant improvement in productivity. Operator workload is reduced and the standard of security increased appreciably.



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