

CNC Cross-Cut Systems

Series C14





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Productivity

Reliable

Experience

Proven

High acceleration

Automatic

Ease of maintenance

Durability

Productivity

Proven

Durability

Robust

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Ease of maintenance

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High acceleration

Productivity



Series C14 setting the new standard for

Maximum timber yield

The C14 is a high-performance cross-cutting machine designed for use in modern industrial timber processing plants. It is ideal for cutting heavy and difficult workpieces where high demands are placed on production speed and accuracy.

With the aid of computer technology the C14 offers significant improvements compared to conventional cross-cut saws in terms of:

- Timber yield
- Productivity
- Manpower required
- Safety
- Quality
- Information technology

In 1975 PAUL was the first German manufacturer to build a computer-controlled cross-cut saw. After 15 years of successful experience with the well-proven and reliable model 14 the upgraded C14 successor model was launched. It retains the benefits of the previous model plus greater productivity, a new CNC control and an up-to-date design.



Fig. 1: Optimum timber guidance in cutting area

The C14 sets new standards...

... for integration into your control system

The C14 series is perfectly suited to the new MAXI 5 Premium (optional Basic) generation of CNC controls.

The MAXI 5 Premium is distinguished by an integrated network capability and exceptional user friendliness. Connected to a network, the control enables unlimited data exchange between machine and any network computer. (For details, see MAXI 5 CNC Control brochure, B120.16/10)

... for productivity

Outstanding productivity combined with excellent accuracy is achieved by the very high feed speed, the rapid sawing action and the sharp acceleration characteristic of the C14 series.

Thanks to the upgraded servo feed drive and redesigned pneumatics for the cutting operation, it has been possible to increase their productivity compared to the well-proven and reliable previous model. The C14 features an appreciably faster sawing action with drastically reduced air consumption.

This makes the successor to the well-tried series 14 even faster and more efficient with a lower energy requirement.



Fig. 2: Measuring station of model C14

The story of success of the well-proven

Optimizing Cross-Cut Systems



... for accuracy

Six jointly driven, large-diameter hard-chrome plated bottom rollers continue to ensure unmatched accuracy at an extremely high throughput speed. The six polyurethane-cushioned top rollers are independently pressure loaded by means of pneumatic cylinders so providing an ideal combination of elasticity and firm control of the timber and ensuring easy absorption of variations in the timber thickness and shape.

... for durability

The proven high durability of the PAUL C14, even when cutting difficult timber, is ensured thanks to its heavy-duty design with a distortion-free 30 mm thick steel frame, over-dimensioned bearings and guides, a long saw rocker with widely spaced bearings and many other constructional features which will guarantee a long life for the machine.

... for reliability

The essential features that proved to be so successful on the previous model 14 have also been incorporated into the C14 series, so ensuring ready availability of spare parts and offering advantages in the fields of servicing/maintenance and technical know-how.

... for design

With the curved profile of the line and the over-dimensioned tunnel guards, the C14 will add style to modern manufacturing plants.

... for safety

Machine covers, doors and tunnel guards effectively prohibit access to dangerous moving parts and hazardous zones.

... for ease of use and maintenance

The construction of the C14 is amazingly simple and transparent. Large viewing windows made of impact-resistant polycarbonate allow an excellent view of the machine operation. Protection hoods and covers are very convenient to open ensuring direct access to all important components. Cleaning and saw blade replacement is made very easy thanks to the large front door (electrically interlocked during operation).

... for waste disposal

Due to the inclined position of the machine waste pieces can be disposed of automatically. They are ejected to the rear of the machine by gravity assisted by an efficient air-jet (fig. 13). This principle has proved very successful for 20 years.



Fig. 3: The bare steel frame weighs 600 kg



Fig. 4: The complete machine weighs 1200 kg

PAUL Series 14 goes on.



The Top Model for full optimization

- ① Infeed side
- ② Measuring station
- ③ MAXI 5 Premium CNC control
- ④ Cross-cut station
- ⑤ Outfeed side with sorting ejectors



Fig. 6: Width measurement (option) in measuring station



Fig. 7: Crayon mark recognition in measuring station



Fig. 5: Lateral belt conveyor followed by defect marking

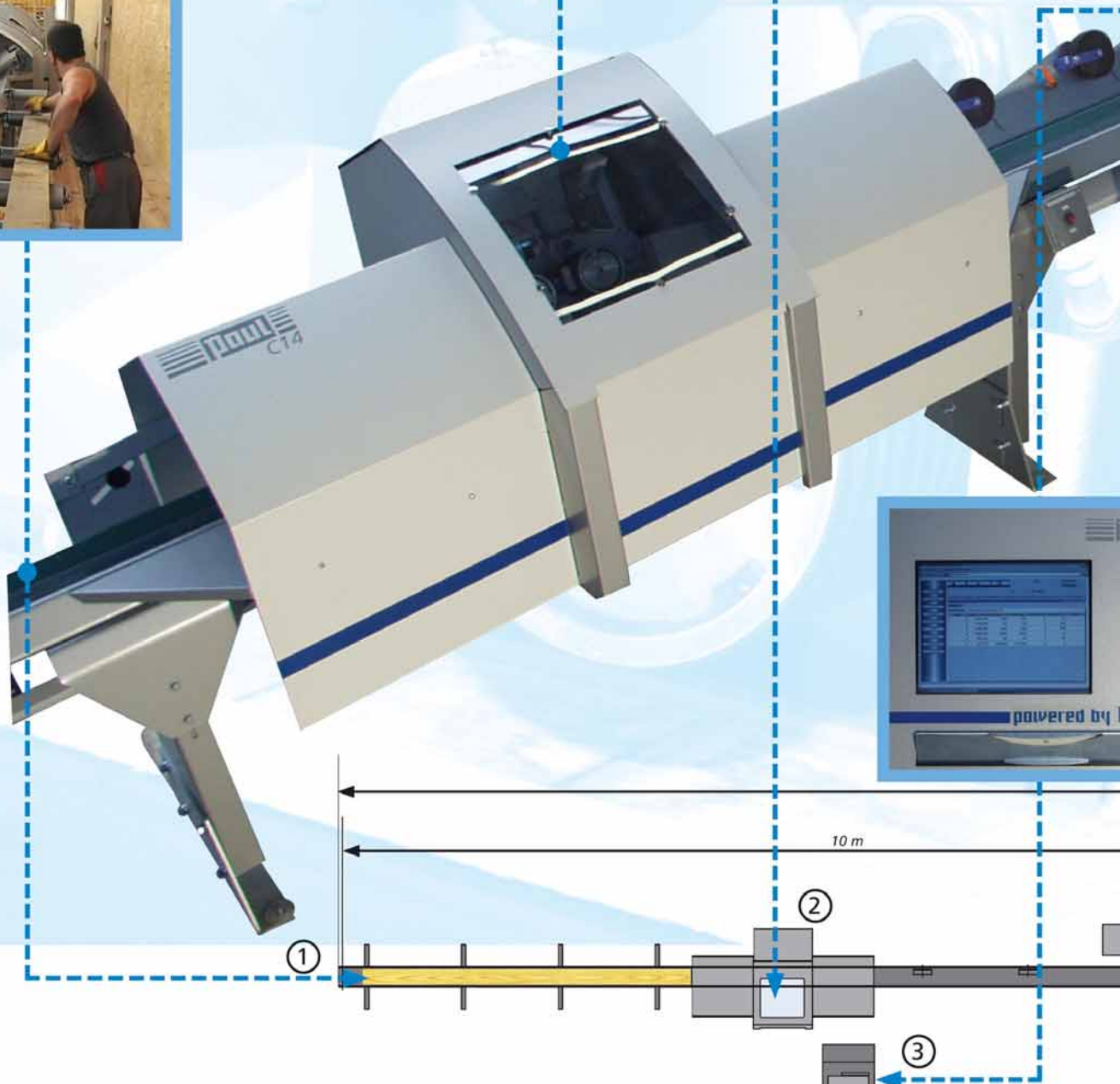




Fig. 8: Controlled clamping device with integrated dust extraction above the saw blade

Fig. 10: Model C14_MKL



Fig. 12: Wide feed rollers ensure optimum timber guidance in the cross-cut station



Fig. 9: MAXI 5 Premium with touch panel



Fig. 11: Pressure roller unit between measuring station and cross-cut station



Fig. 13: Air-jet blower in the cutting area



Fig. 14: The saw blade is completely enclosed and easily accessible

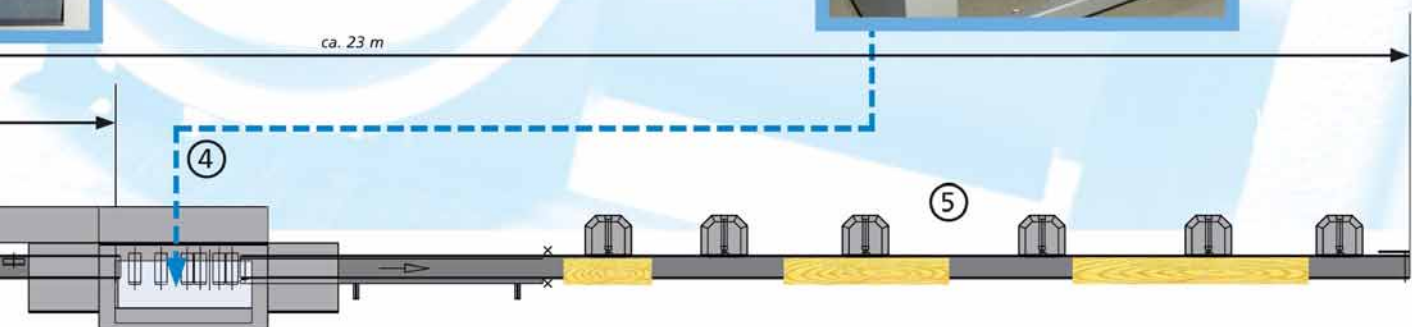


Fig. 15: Scheme of C14

Model C14_KE



For automatic cross-cutting following a cutting list including defect removal

In addition to cutting the timber following a programmed cutting list the C14_KE is capable of detecting crayon marked defects. A luminescent scanner in the cross-cut station transmits the defect locations to the computer which then calculates the longest possible fixed length, either between the beginning and the end of the timber or between two crayon marks (= partial optimization). Cutting can also be effected only at the marks, e.g. if finger-joint lengths are to be produced. In this case there is no separate measuring station required.

Model C14_KE is used with a MAXI 5 Basic or optional MAXI 5 Premium control.



Fig. 16

Model C14_E

For optimized cross-cutting following a cutting list

Model C14_E cuts the timber according to a programmed cutting list and normally chooses the longest possible preset length that can be cut between the beginning and end of the timber. Defects are not being considered.

Equipped with an automatic infeed length identification (no crayon mark recognition), model C14_E can also be used for full optimization (see table on page 10).

Model C14_E is used for applications where no defect cutting is required.



Fig. 17

Options



Special features and peripheral equipment for an increased efficiency of production

Automatic destacking
"VacuSpeed" (fig. 22)

Buffer feeding systems (fig. 20)

Distribution systems to several
cross-cut systems

Auto stackers (fig. 21)

Width measurement

Ink-jet printer for letter or
colour code printing on top or
bottom face and/or end face of
the cut pieces (fig. 18)

Infeed top pressure roller unit

Automated handling equip-
ment (fig. 19)

Length sorting units

Ejecting to one side only using
pneumatic ejectors (fig. 23)

Right/left pendulum sorting

Right/left cross-chain sorting

Compact cross-belt sorting

Automatic Defect Identifica- tion

The Paul C14 machines can be
equipped with an automatic
defect scanner.



Fig. 19: Pneumatic ejectors followed by an auto stacking and destacking system



Fig. 20 Buffer feeding system



Fig. 22: VacuSpeed destacker



Fig. 21: Auto stacker SA-25



Fig. 18: Ink-jet prints



Fig. 23: Automatic sorting system

Technical Data



Overview Equipment / Types

C14_E	Length cutting acc. to cutting list	X	—	X	—	—	○	—	MAXI 5 Basic
C14_E		X	XX	X	∞	—	○	○	MAXI 5 Premium
C14_KE		X	X	X	—	—	○	—	MAXI 5 Basic
C14_KE		X	X	X	—	—	○	○	MAXI 5 Premium
C14_MKL		X	X	X	X	X	○	○	MAXI 5 Premium
	Defect cutting								
	Partial optimization								
	Full optimization								
	Measuring station								
	Length sorting								
	Width measurement								
	CNC control								

X as standard

○ option

— not available

∞ with auto infeed length identification (option) and MAXI 5 Premium

XX with defect scanner, standard

Machine Data

Saw motor (option)	kW	7.5 (11)
Powered bottom rollers		6
Rubber-coated top pressure rollers		6
Saw blade diameter (option)	mm	600 (max. 730)
Speed of saw blade (option)	rpm	3600 (3000)
Dust outlet diameter	mm	2 x 160
Min. dust extraction requirement (25 m/s)	m ³ /h	3600

Timber Data

Min. infeed timber length	mm	600
Max. infeed timber length	mm	according to offer
Min. finished length	mm	180*
Timber cross sections	mm	see cutting diagram
Max. timber weight (option)	kg	70 (on request)

* with fence for short pieces 80 mm (option)



Roller configuration and side view

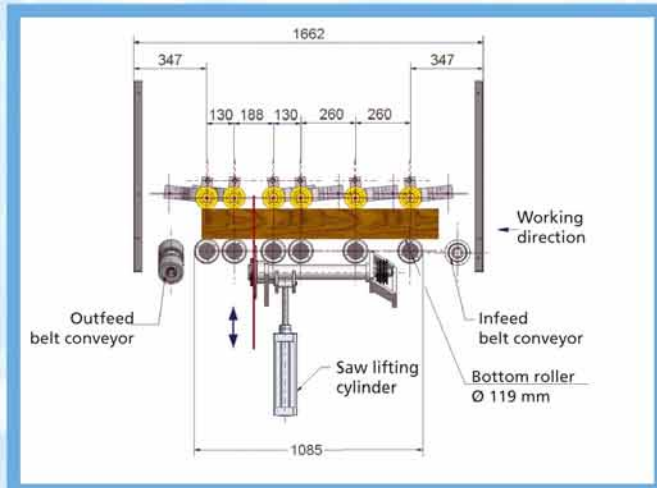
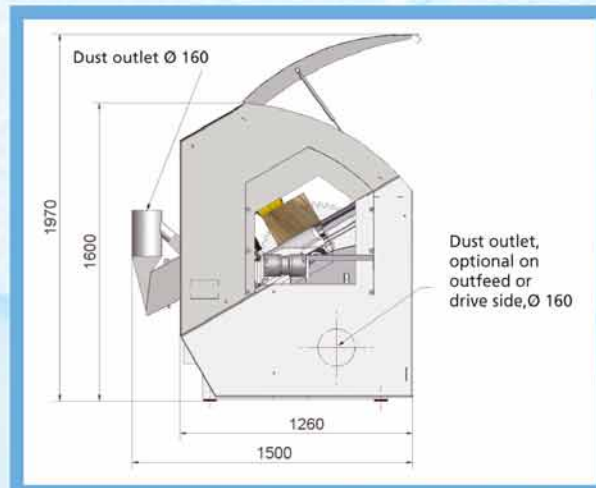


Fig. 24: Roller configuration of C14 cross-cut saw

Fig. 25: Side view of C14 cross-cut station



Cutting diagram

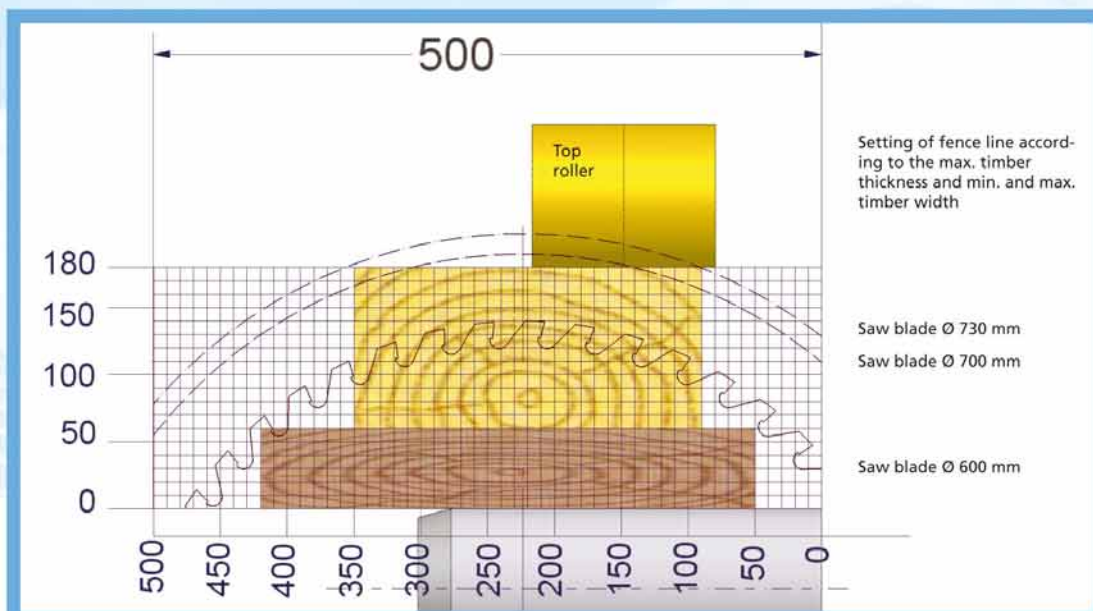
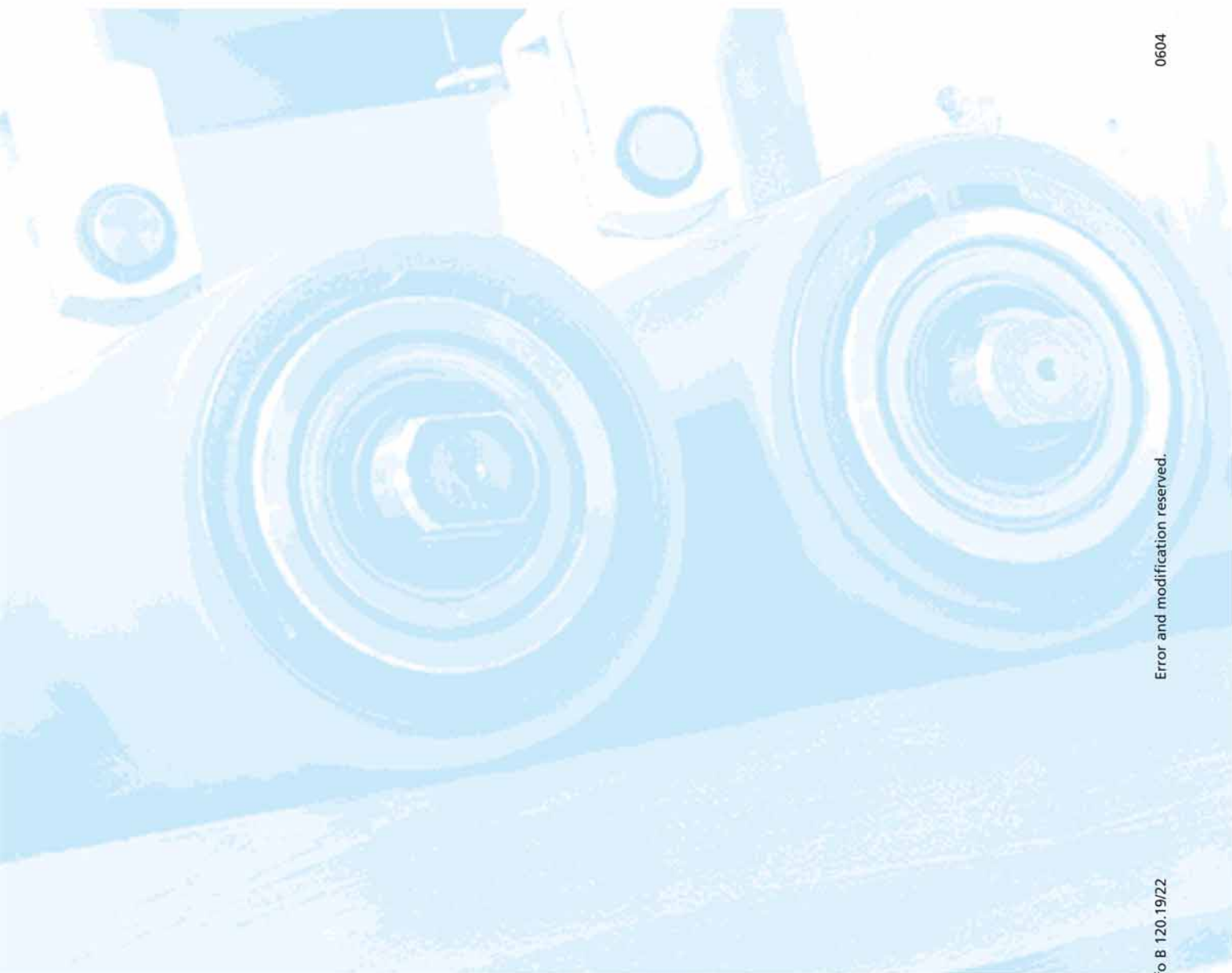


Fig. 26: Cutting diagram



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PAUL-Info B 120.19/22

