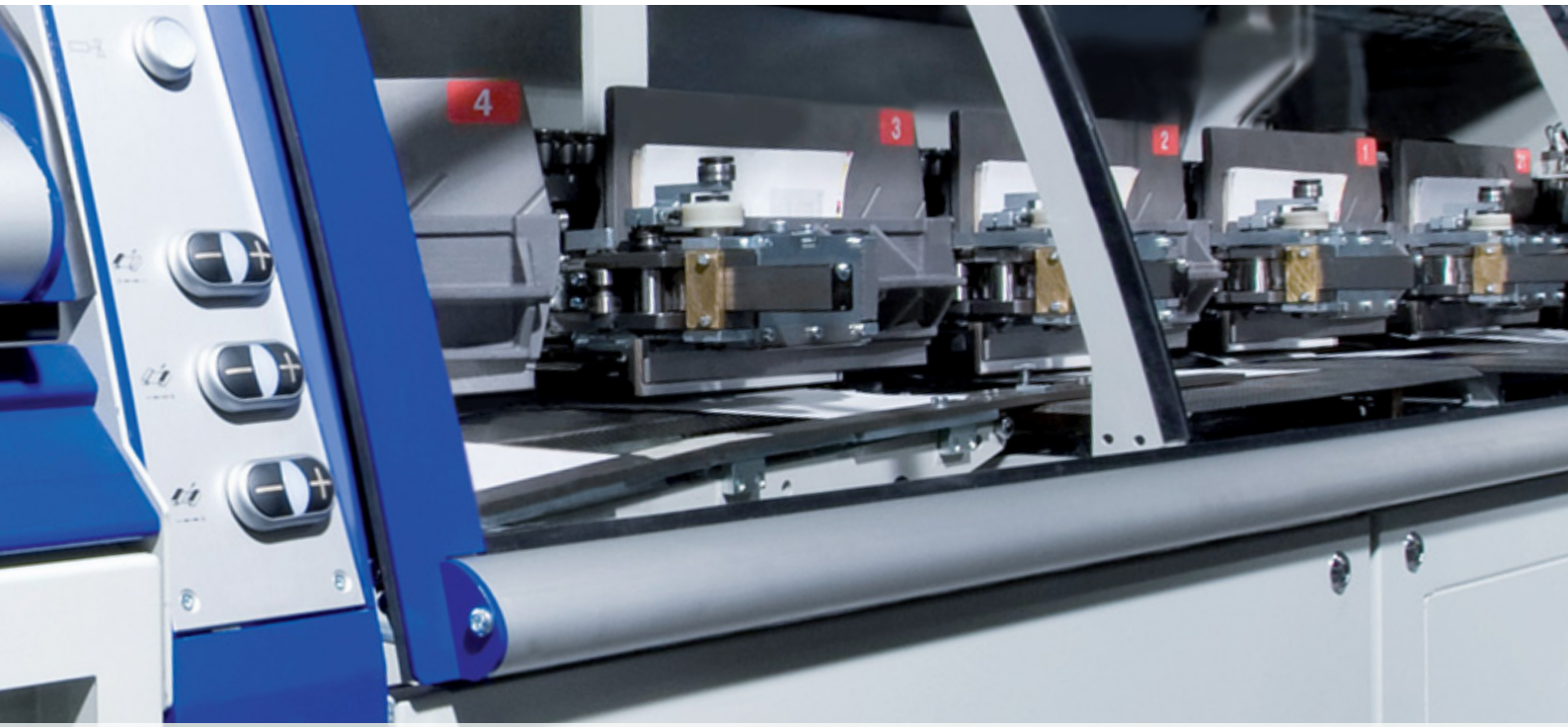
KOLBUS.

# Perfect binding line
# 7,000 cycles/h



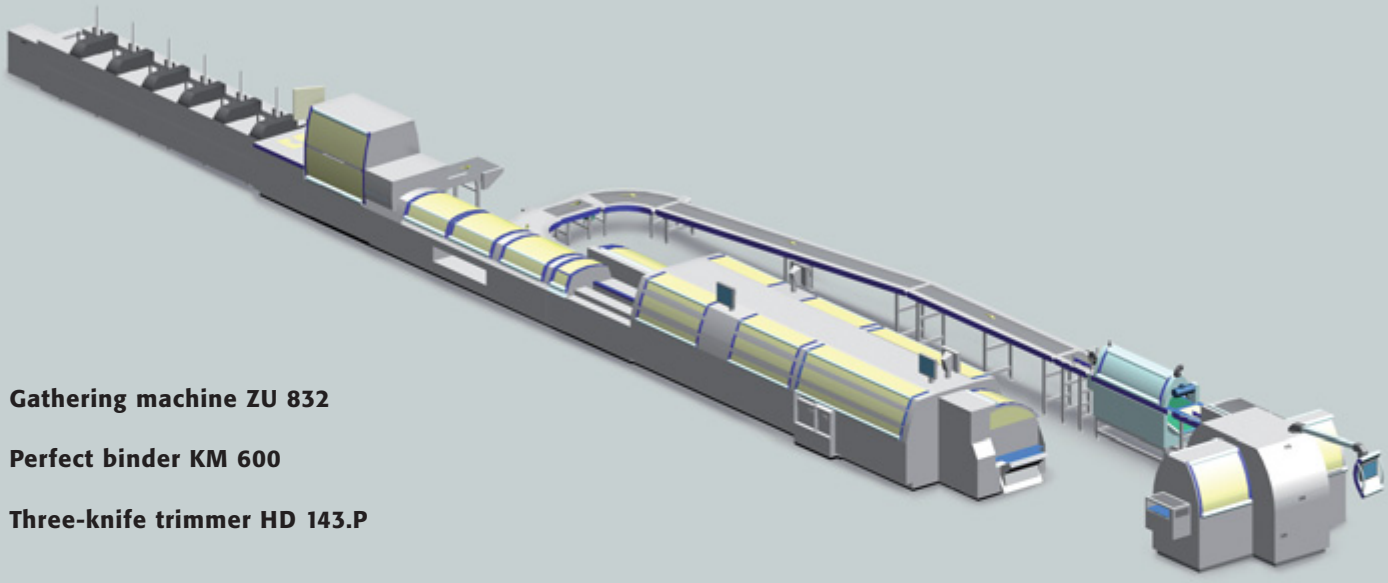
- Gathering machine ZU 832
- Perfect binder KM 600
- Three-knife trimmer HD 143.P

# KOLBUS. Perfect binding line
## 7,000 cycles/h

**The compact KM 600 perfect binder – at an amazingly attractive price – is the ideal entry-level machine for professional bookbinding. Teamed with a ZU 832 gathering machine and an HD 143.P three knife trimmer, the KM 600 operates under control of the KOLBUS Copilot® system to create a highly automated production line. It offers an extremely cost-competitive solution for the production of book blocks, paperbacks or any commercial perfect-bound items.**

**The production line combines state-of-the-art engineering with a compact design and small footprint. Other factors that make for consistently high performance in virtually non-stop operation include easy and ergonomic operation, fast and efficient changeover, and simple maintenance.**

**KOLBUS perfect binding line** | inline configuration • 7,000 cycles/h



- **Gathering machine ZU 832**
- **Perfect binder KM 600**
- **Three-knife trimmer HD 143.P**

**The KM 600 and the KOLBUS machines upstream and downstream of it can be linked to the KOLBUS 3•60 Management Report System. The 3•60 covers two areas:**

**System data management links KOLBUS Copilot-controlled machines to control and evaluate the following aspects of production: job processing, production scheduling, online evaluation, production, customer resource management, machine monitoring and set-up. Data exchange with JDF components is available as an option.**

**The 3•60 service portal allows live and simultaneous communication between the customer and KOLBUS service experts. The 3•60 consists of the internet-based remote diagnosis and service module for networked KOLBUS machine installations, the maintenance manager for scheduling, displaying and documenting service, maintenance and inspection activities, and the documentation manager to document machine operation.**


## ZU 832

**Gathering machine**
**7,000 cycles/h**

Page 4

## KM 600

**Perfect binder**
**7,000 cycles/h**

Page 10

## HD 143.P

**Three-knife trimmer**
**4,200 cuts/h**

Page 22

### Other configuration (option)

**ZU 804**

**KM 600**

**HD 143.P**

- **Expandable in modules of 3 stations**
- **Custom line length – 9 to 33 stations**
- **Missing and double sheet detection**
- **Integrated SignaLynx signature recognition**

# Gathering machine ZU 832

Gathering machine efficiency is a critical factor in the productivity of the whole perfect binding line. The ZU 832 gathering machine is a seamless match in both design and performance for the KM 600. Its separating performance is identical to that of our proven ZU 841.


▲ **Central data entry and operating unit with integrated SignaLynx signature recognition**

▲ **Feeding stations**

## ■ Operation

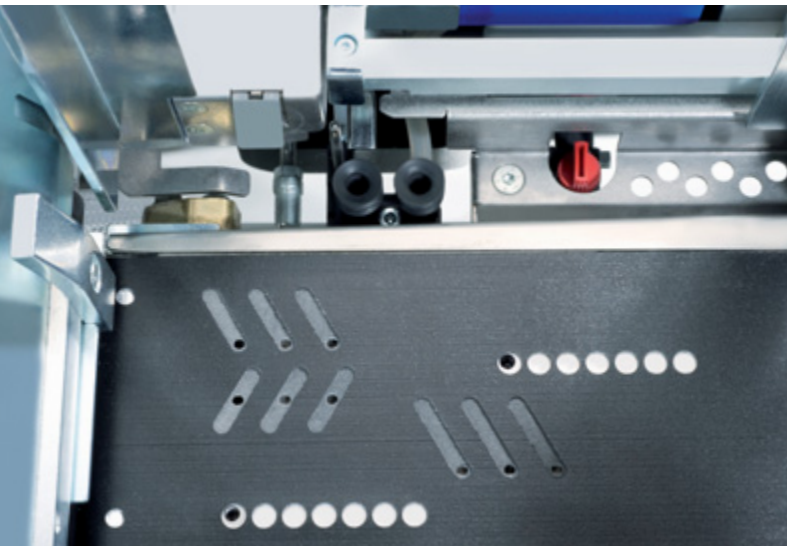
Gathered sections or single sheets are transported directly forwards in the transport direction of the gathering chain.

Sections are separated by a combination of suction heads, air nozzle and a suction belt. Suction cups grip the bottommost section, creating a gap in the stack. An air nozzle inserted in the gap creates an air cushion separating the bottommost section, which is transported smoothly out of the magazine by the suction belt. The separated sections are passed smoothly and with no change of speed to transport belts, which take them, positively-guided, to the transport fingers of the gathering chain.

Sophisticated engineering means that, with minimal set-up effort, the ZU 832 gathering system can handle blocked sections from web printing machines and inserts from folding machines without problems.

## ■ Set-up

Production start and finish are controlled by a cascade. The current format – the point in time at which the section is deposited ahead of the gathering chain – is entered centrally and activated automatically by motor drives. The drop height to the raceway can be set separately for each station.



▲ **Separating station**


▲ **SignaLynx signature recognition**

## ■ Ergonomics

The new machine concept brings multiple ergonomic benefits. Access to the ZU 832 has been optimised and the machine can be fed from both sides.

## ■ Static nailing

When gravure-printed sections are fixed electrostatically, the necessary high-voltage electrode is located in the infeed magazine. The electrode can be located at any infeed station.

## ■ Monitoring systems

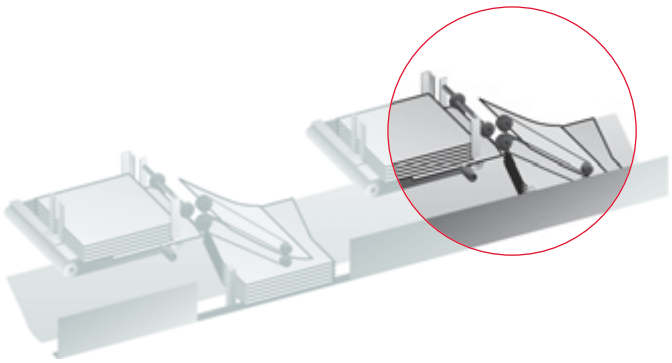
The ZU 832 is equipped with the ATC self-learning missing and double section detection and with the SignaLynx optical signature recognition system. Rejects are diverted out of the system without interrupting production.

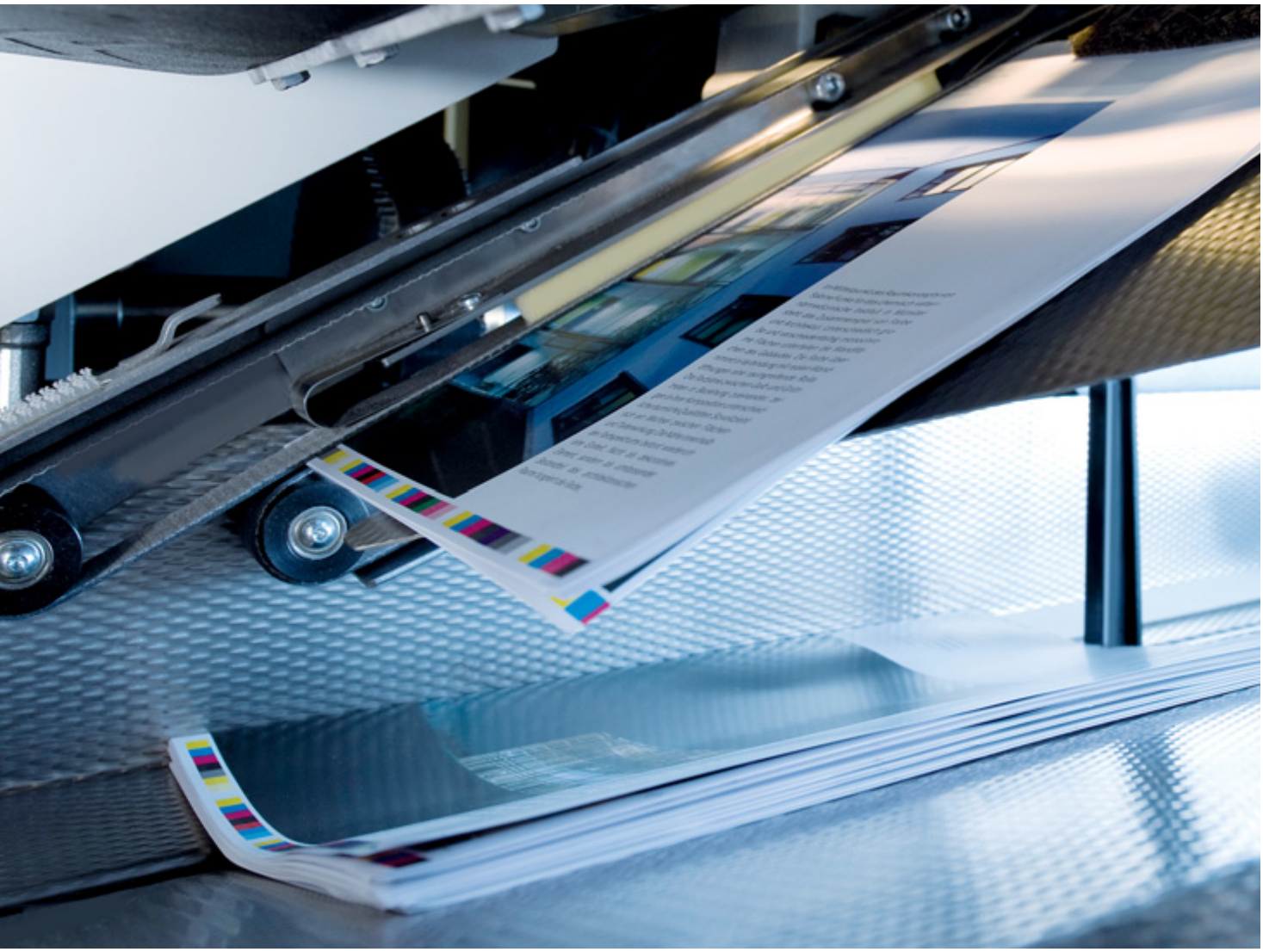
## ■ Feeding

The gathering machine can be fed manually or fitted with bundle feeders.

Bundle feeders are connected using a reliable and efficient quick-release connector. The bundles are handled by means of grippers.

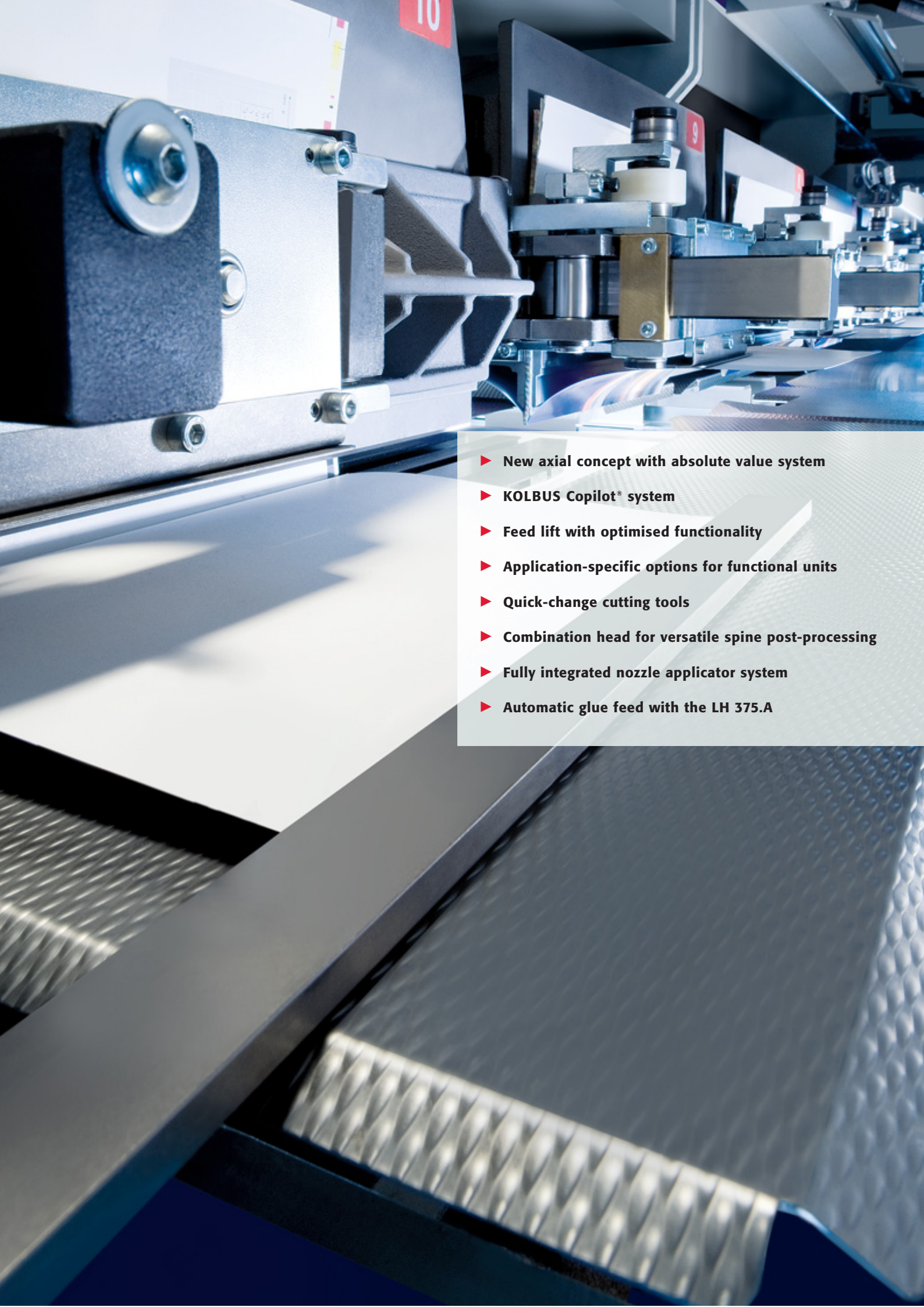
## **KOLBUS ZU 832** | 7,000 cycles/h





▲ **Sections moving into the raceway**

▲ **Reject unit**



- New axial concept with absolute value system
- KOLBUS Copilot® system
- Feed lift with optimised functionality
- Application-specific options for functional units
- Quick-change cutting tools
- Combination head for versatile spine post-processing
- Fully integrated nozzle applicator system
- Automatic glue feed with the LH 375.A

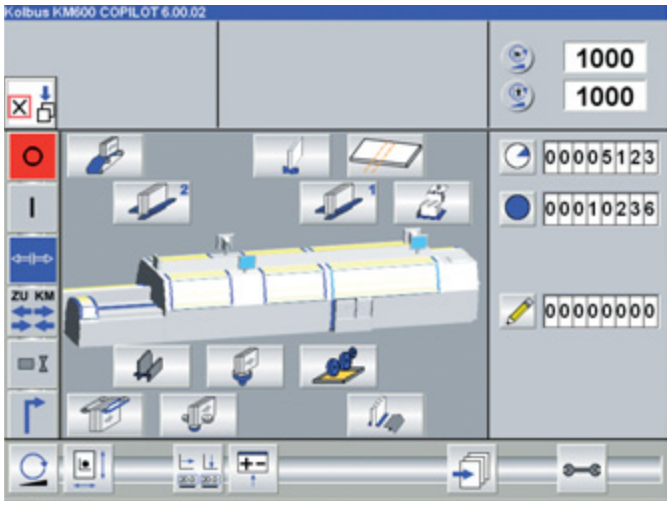
# Perfect binder KM 600

KOLBUS simplifies calculations for entry-level perfect binding by offering a machine that is attractively priced, simple to operate and highly automated, thanks to the KOLBUS Copilot® system. Features that contribute to outstanding product quality include the angled lift feed, the rugged clamping system and the swivel-mounted milling unit, which makes tool-changing far easier.

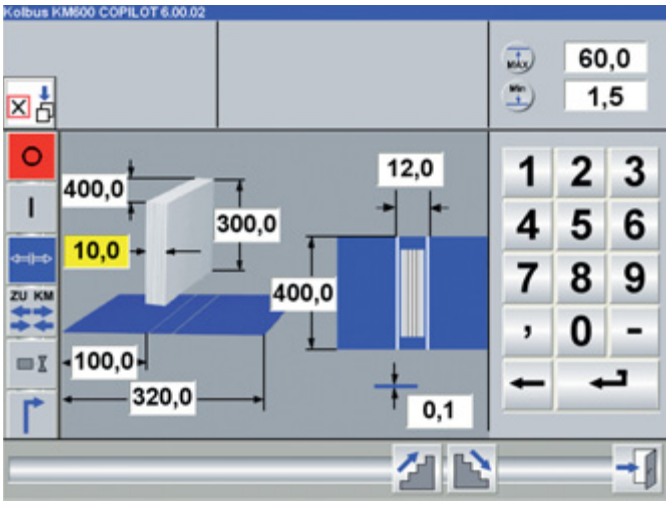
## KOLBUS Copilot® system

Quick and easy resets, data exchange between machines, zero-error operation – the KOLBUS Copilot® system handles all this and much more with ease. The operator is guided smoothly through the operating sequences. The Copilot creates the conditions for productive teamwork between operator and machine.

Touch screens are currently state-of-the-art for man/machine interfaces. The KM 600 is operated from a central touch screen operator panel. Three displays strategically located along the line give the operator access to operating data from any point. All machine functions and control data are clearly displayed as colour-coded diagrams and realistic images. Functions are activated by touching the screen. Control data and diagrams are displayed in the same format on all displays.

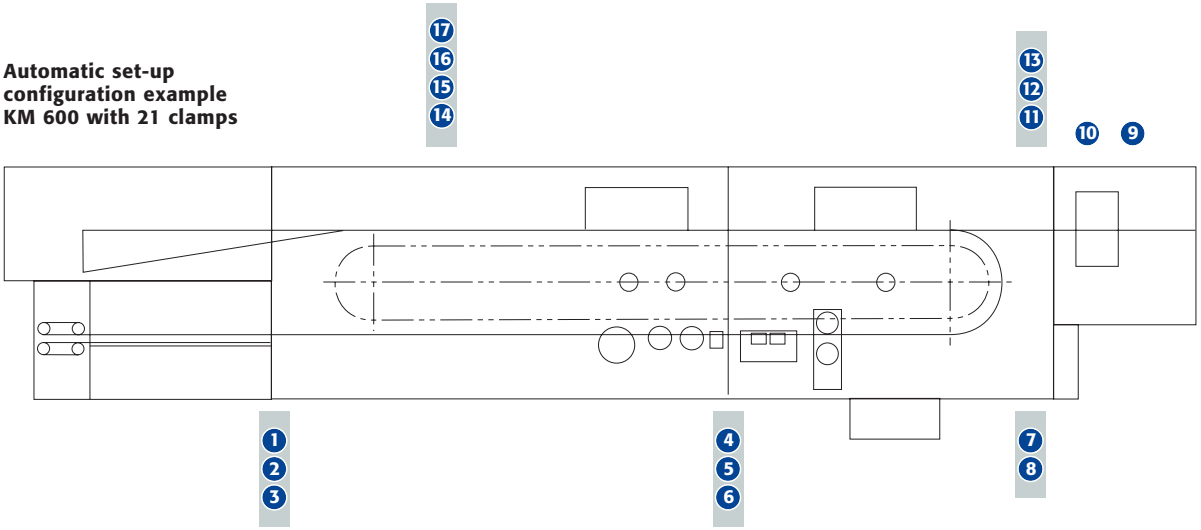



▲ **Format set-up screen**



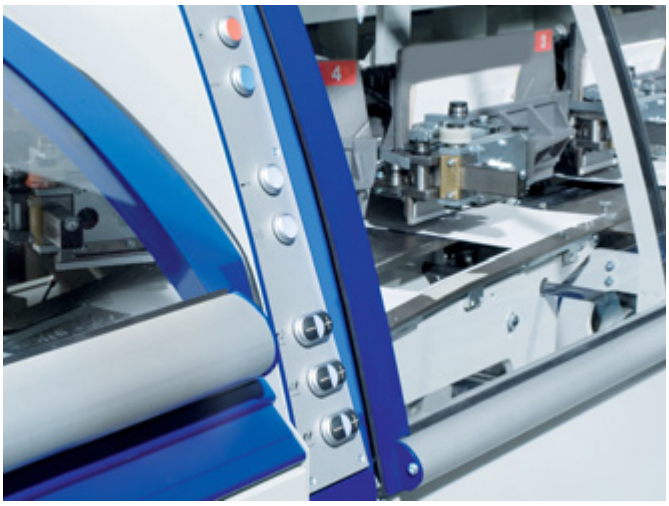

▲ **Spine milling screen**

**Automatic set-up configuration example KM 600 with 21 clamps**




## ■ Plus/minus keys for precision adjustment

Plus/minus keys, located at the operator points for each section, allow the operator to make fine adjustments to specific axes easily and precisely. Each pair of keys has a communication link to the relevant processing station.



▲ **Operating section and plus/minus keys**

1 **Infeed channel** | block thickness
2 **Infeed** | vertical height
3 **Clamp** | block thickness

4 **Main milling cutter** | block thickness
5 **Spine processing** | block thickness
6 **Side gluing unit** | block thickness

7 **Lining station** | block thickness + lateral lining overhang
8 **Lining station** | lining feed

9 **Cover magazine** | cover height

10 **Scoring tools to the right** | block thickness

11 **Cover guide for pressing station to the left** | block thickness
12 **Cover guide for pressing station to the right** | block thickness + width
13 **Cover guides left + right** | parallel correction

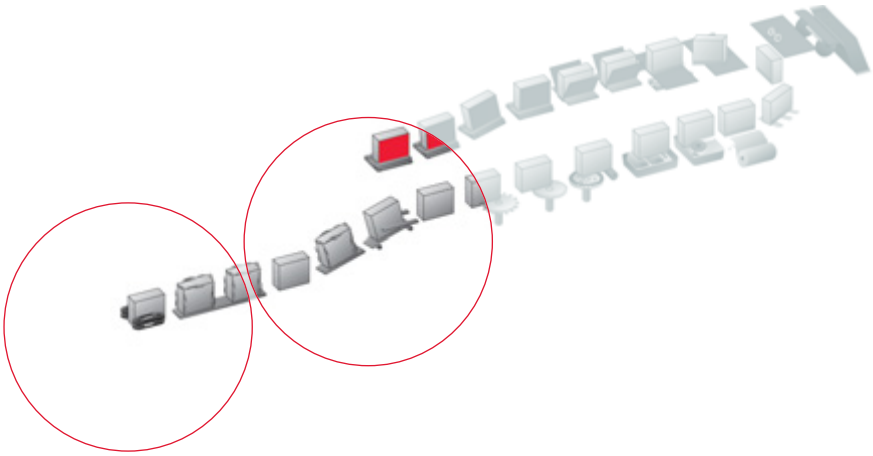
14 **Pressing station 1** | block thickness
15 **Pressing station 1** | vertical height
16 **Pressing station 2** | block thickness
17 **Pressing station 2** | vertical height

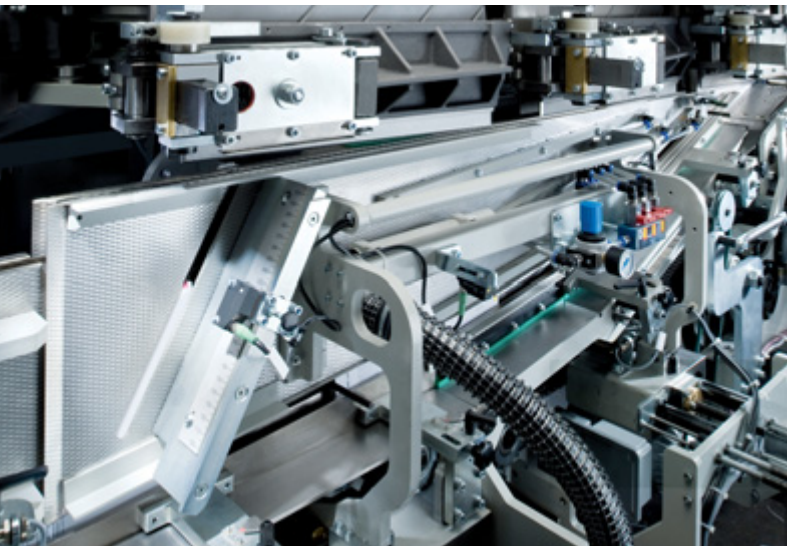
## ■ Production type

This mid-range perfect binder, with either 21 or 27 clamps, is designed as a general-purpose machine for routine finishing operations. We offer a range of variant configurations, enabling almost any type of brochure to be produced efficiently.

The KM 600 supports the following binding styles:
- ☐ Perfect bound brochures, magazines, journals, etc
- ☐ Sewn and thread-sealed book blocks and brochures
- ☐ Perfect bound, sewn book blocks with linings
- ☐ Layflat products (Otabind, Swiss brochures)
- ☐ Flap brochures

All areas requiring operator intervention are designed for easy, ergonomic access and zero-error operation. This is a significant factor in system reliability and productivity.
The generously-sized safety covers swing upwards, allowing free access to machine components.





▲ **Angled feed**

▲ **Sections are raised on levelling platform**

### ■ Section/block feed

Loose sections for one copy are gathered by the gathering machine, held upright on the spine, jogged and transported to the infeed of the perfect binder. At the end of the slanting feed unit, the sections are lifted smoothly and gently from below until they are horizontal.

### ■ Applying endsheets

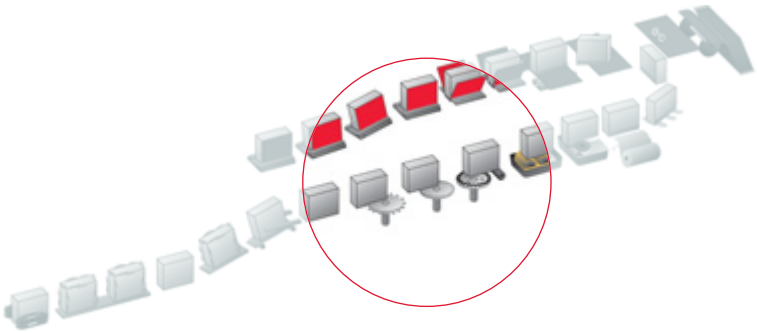
An endsheet unit upstream of the KM 600 adds front and back endsheets to the relevant book block sections. The endsheets are transported and glued separately. Circulating pressure bars on either side apply firm pressure to ensure strong adhesion over the whole length of the endsheets.

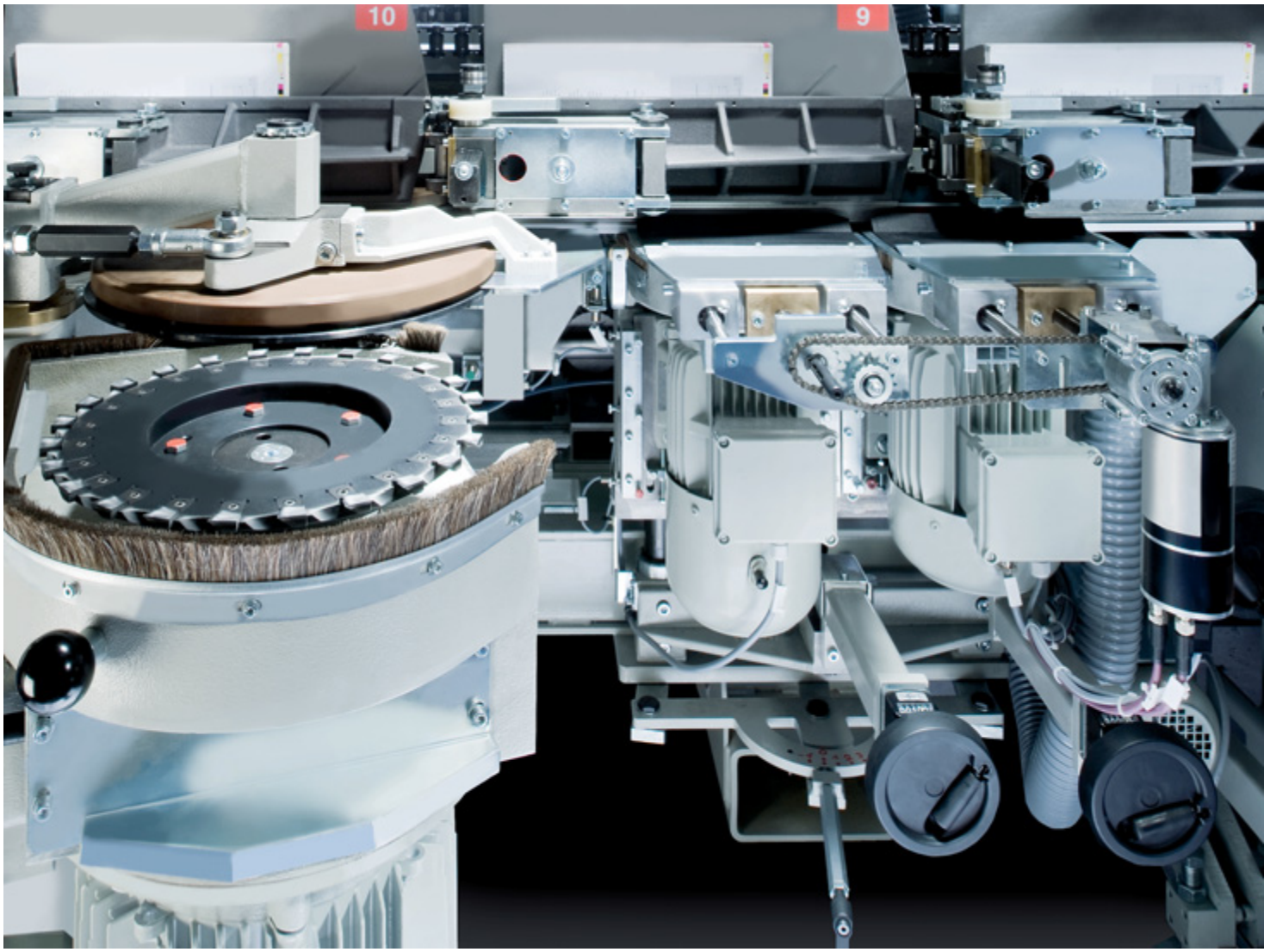
### ■ Transport clamps

The stacked and aligned sections are jogged, then gripped by a transport clamp and passed to the next processing station. The transport clamp can be opened for inspection by pressing the appropriate lever after any processing step.

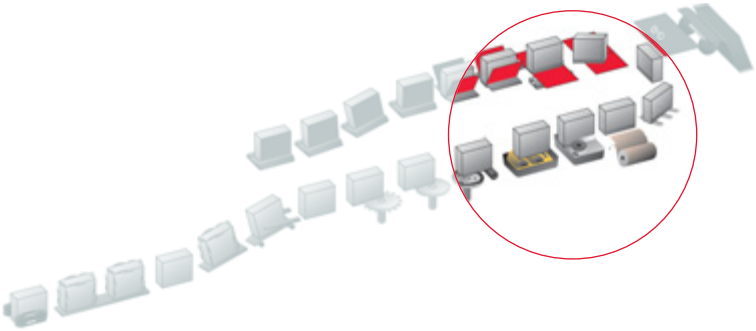
### ■ Spine processing

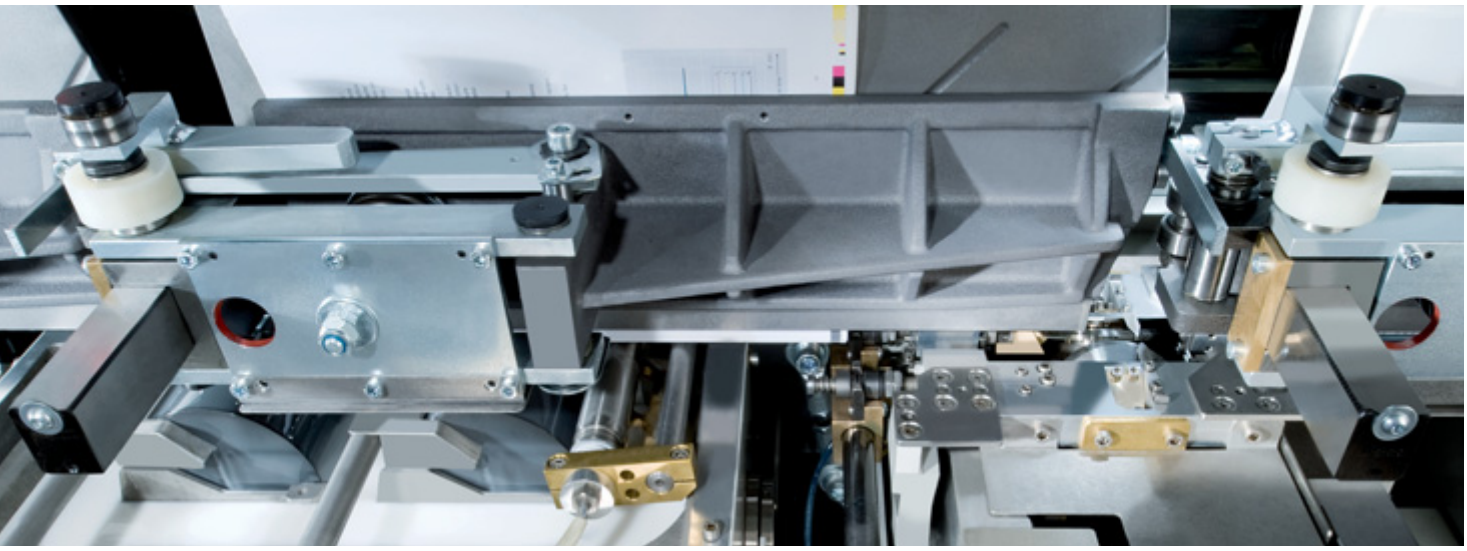
The transport clamp moves the precisely aligned block through the spine processing stations. Absolute precision here is the key to faultless downstream processing. The book block is held firmly by the clamp while the spine is milled by the main cutter and this firm grip is reinforced by spring-mounted discs pressing on both sides of the clamp and by independently adjustable pressure on the block joint. The milling unit can be swung out for easy tool changing. For further processing of the spine prior to gluing, the system provides a compact combination head mounting an equaliser and notcher or notcher/micro-notcher.






▲ **Spine milling station – main milling and versatile combination head**





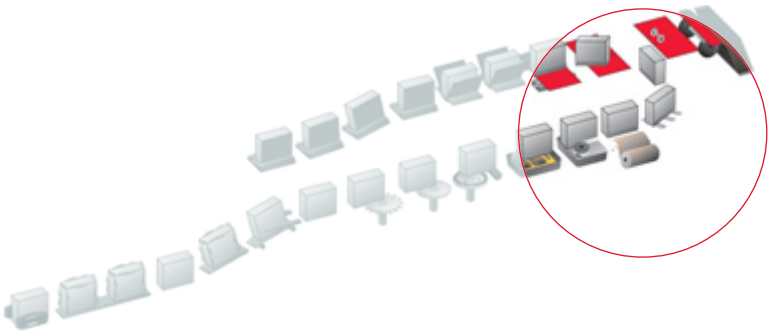
▲ **Spine and side gluing**

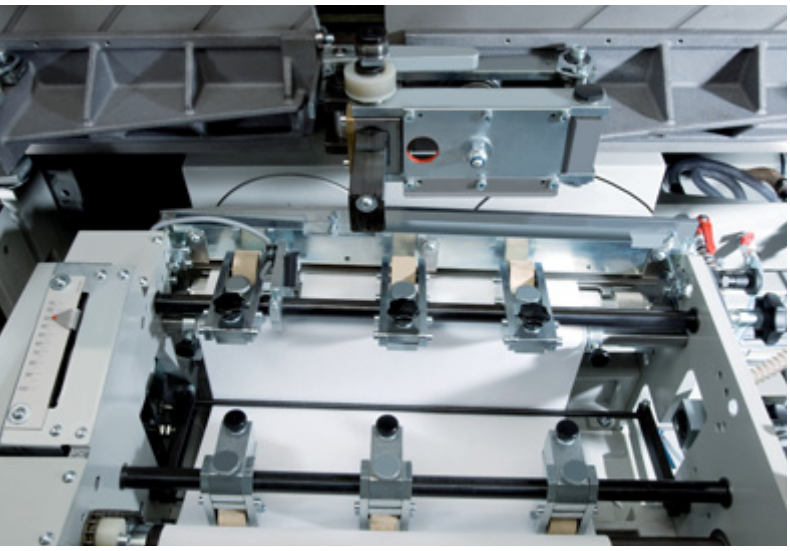
## ■ Spine gluing

Once the spine has been milled and notched, the book block moves on for glue application. The type of glue used depends on the product specifications. The KM 600 can process hot-melt, PU or dispersion glues. The glue is applied by rollers in a one-shot or two-shot process or, in the case of PUR through a nozzle. The gluing attachments are height adjustable and can be run out of the line for quick and easy changeover to a different type of glue. All systems have a control system for intermittent glue application to keep certain areas free of glue.

## ■ Side gluing

Glue is applied to the sides of the block by cylindrical discs mounted at an angle or by a nozzle (EVA/PUR). In its standard version, the side gluing unit is refilled manually, but we also offer an option with automated filling (LH 375.A premelter). The side gluing unit runs out of the machine for easy changeover. All systems include a control for intermittent glue application to keep certain areas free of glue.





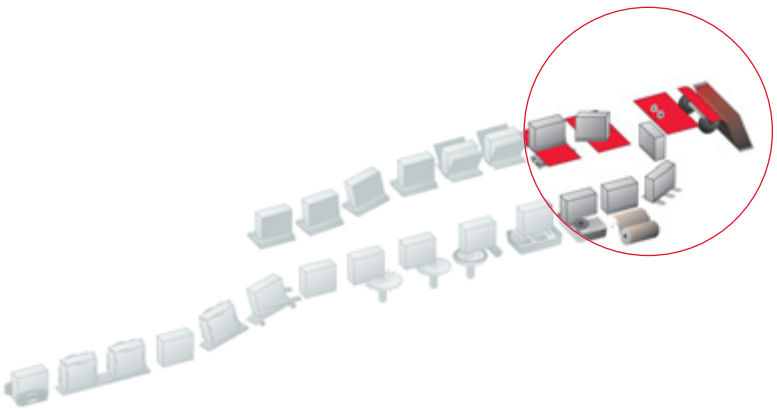
▲ **Lining station**

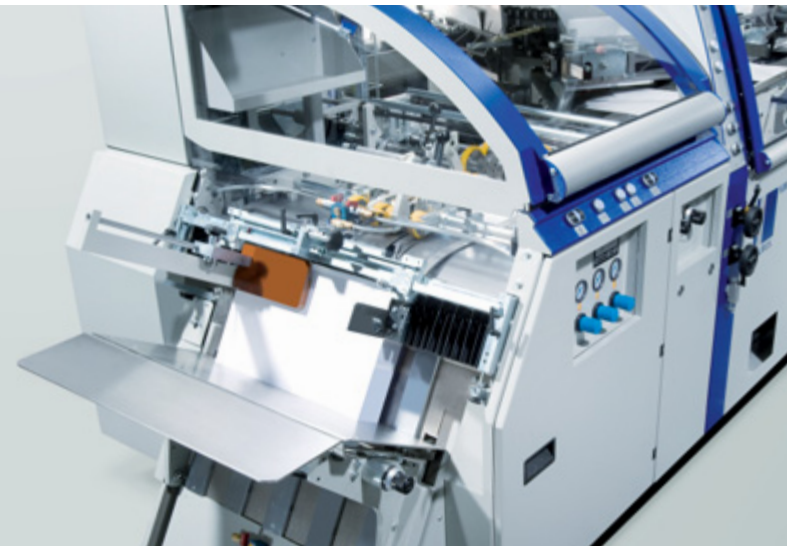

▲ **Heating zone**

■ **Infrared drying**
The perfect binder applies multiple layers of glue using two gluing units. If the application is using dispersion adhesive, the first layer of glue is dried by an infrared heating unit located between the two gluing units before the second layer is applied.

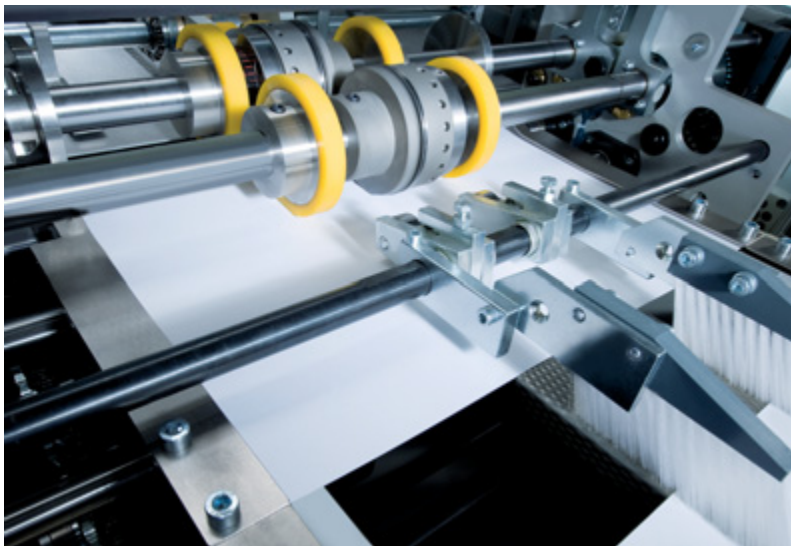
■ **Book block finishing**
Among the customisation options we offer are an endsheet feeder and a swivel-mounted lining station. In the lining station, lining materials, such as gauze or crepe paper, can be applied to perfect bound products and book blocks destined for hardcover binding.

■ **Heating zone**
For hotmelt gluing, an infrared heating zone is recommended. It keeps the glue layer open longer, ensuring that the covers adhere securely to the block. The heating elements are located downstream of the gluing units.





▲ **Cover feeder**



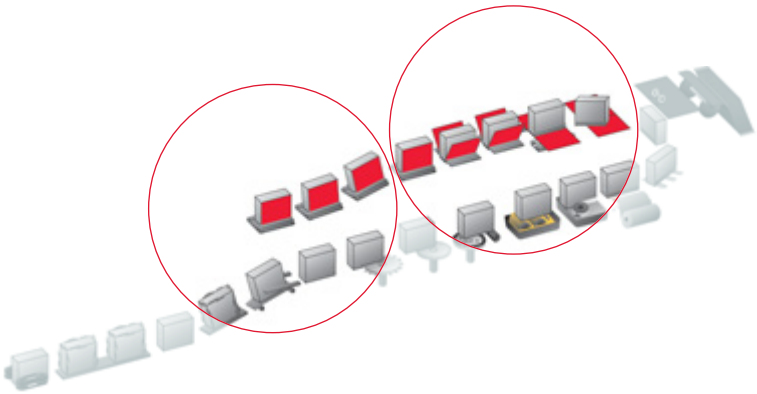
▲ **Scoring station**

## ■ Cover feeder

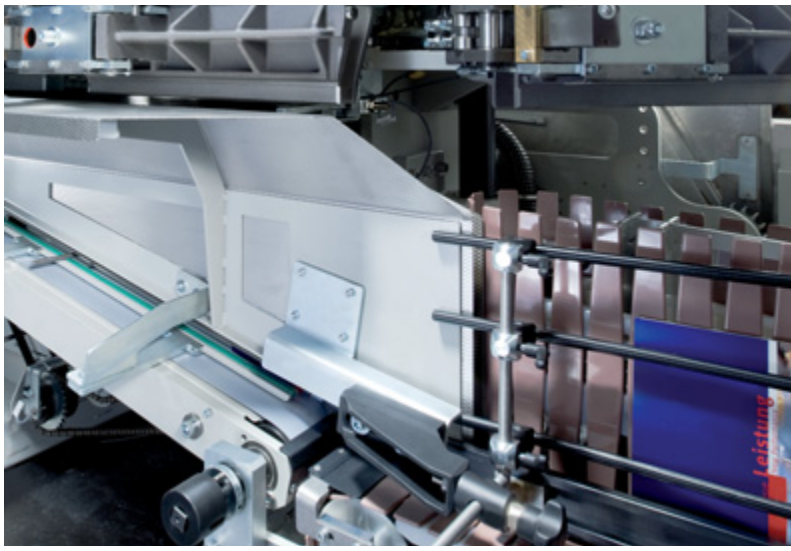
We offer a choice of two cover feed units each suited to specific applications and production volumes – a rotary cover feeder (RA 49) and a stream feed unit.

## ■ Scoring station

The scoring station can tooled up for two, four or six scores. The scoring pairs are set to block thickness by the central set-up system. Precision corrections can be made for deviations from the zero line or if the cover is not lying straight.



▲ **Pressing station**



▲ **Delivery**

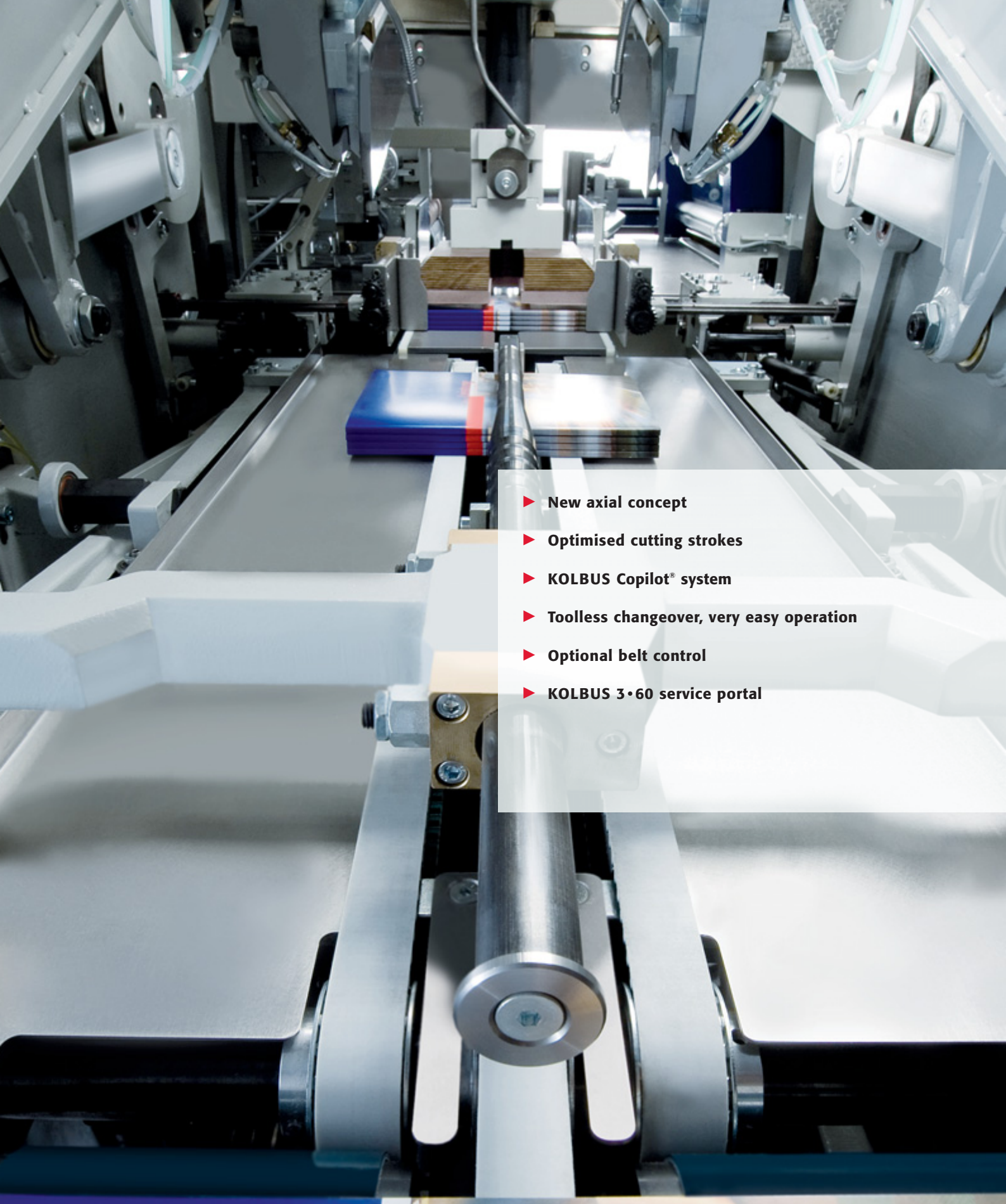
## ■ Cover register and rub down station

This station, where the cover and block are joined, is critical for binding quality. Every detail has been engineered to deliver the highest product quality. The system processes all commonly-used cover materials. If the applications require it, the system can be configured with a second pressing station or a pressing roll immediately downstream of the first pressing station.

The long synchronised run of contact table and clamps guarantees outstanding processing quality. Spine and side pressing can be precisely adjusted. Pressing duration can be set to take account of different materials, making sure that block spines are always exactly shaped and right-angled.

## ■ Delivery

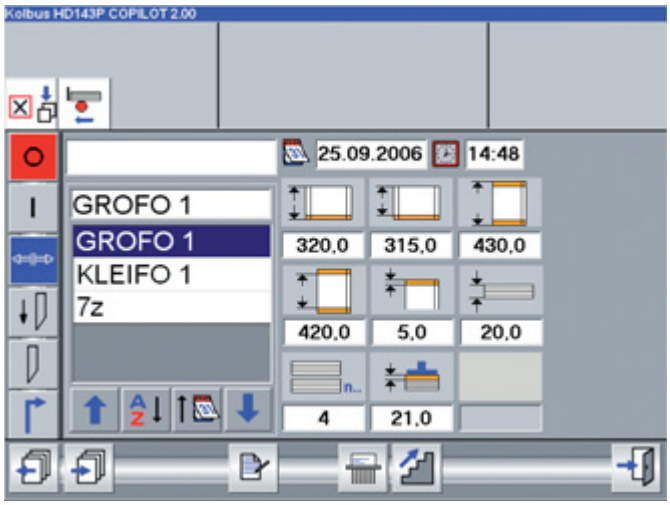
Products leave the binder held upright on their spines on a transport belt which passes them to the lay-down system in the delivery zone. The KM 600 uses a plate-chain lay-down system guaranteeing not to mark or damage the product in any way.



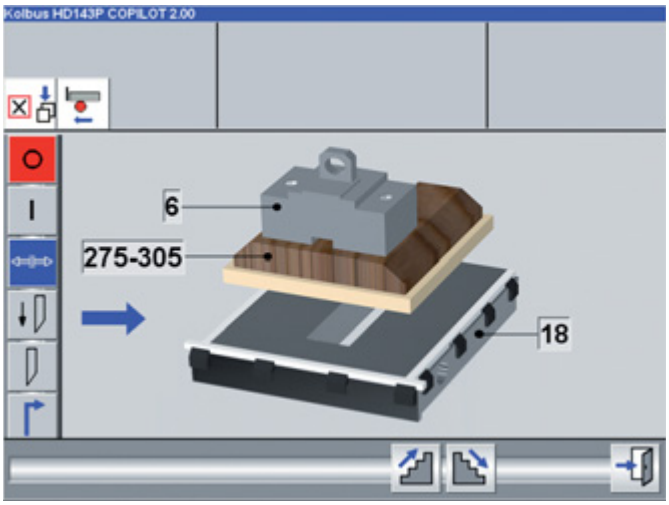
- New axial concept
- Optimised cutting strokes
- KOLBUS Copilot® system
- Toolless changeover, very easy operation
- Optional belt control
- KOLBUS 3•60 service portal

# Three-knife trimmer HD 143.P

The HD 143.P three-knife trimmer is engineered as a perfect match with the overall KOLBUS design concept. It's the ideal component in perfect binding lines at 4,200 cuts/h. Combining tried-and-tested mechanical systems with ultramodern electronics produces machines that are very easy to operate and capable of delivering premium quality products. This approach also makes sure that KOLBUS machines are rugged and reliable over long service lives. Belt control (option) and data input are integrated in the three-knife trimmer.




▲ **Operator screen: saving job formats**




▲ **Operator screen: change parts**

## ■ KOLBUS Copilot® system

Key features:

- ☐ Central operator panel for data entry and operation
- ☐ Touch screen monitor
- ☐ Error messages
- ☐ Change parts display
- ☐ Automatic format setting
- ☐ Title memory
- ☐ Display change parts for the next job during prior job processing
- ☐ Master control centre
- ☐ Automated data management
- ☐ Remote diagnostics

## ■ Touch screen monitor

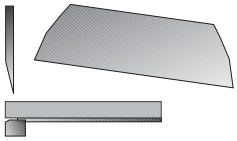
Touch screens are state-of-the-art for man/machine interfaces. The operator is guided smoothly through the operating procedures. Operating instructions are displayed without text as self-explanatory graphics. Functions are activated by touch.

In addition, the operator can intervene directly in running production via a separate key panel. Instead of spending time paging through different screens on the monitor, the operator can access target settings quickly and accurately on the key panel and key in the changes.

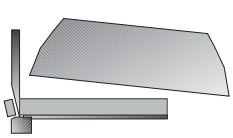

▲ **Touch screen operator panel for data entry and operation**

**HD 143.P – knife stroke**

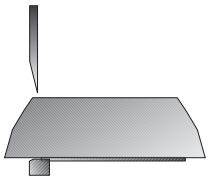
▼ **Start position Side and front knives**



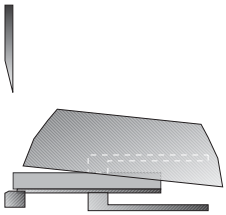
▼ **1. Cutting: front knife**

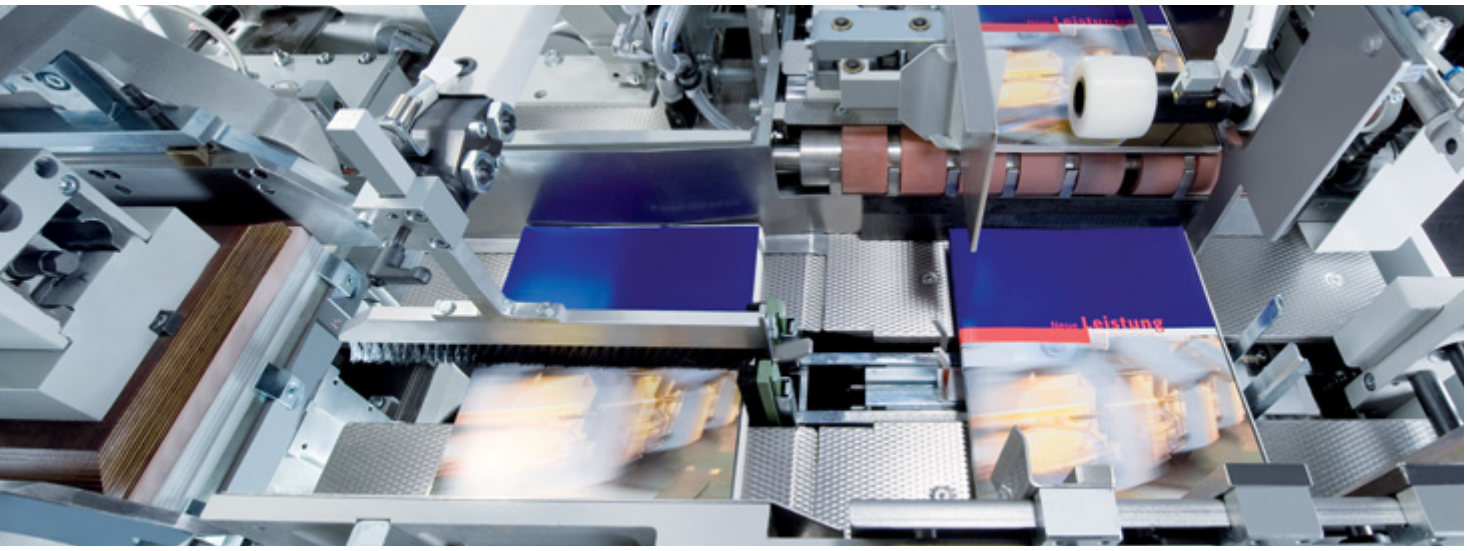


▼ **2. Cutting: side knives**



▼ **Delivery gripper**





▲ **Trimmer infeed**

## ■ Infeed/magazine

Book blocks arrive at the three-knife trimmer on a transport belt. Feed frequency is adjusted via an intermittently operating roll to match the speed of the upstream machine and the format of the block.

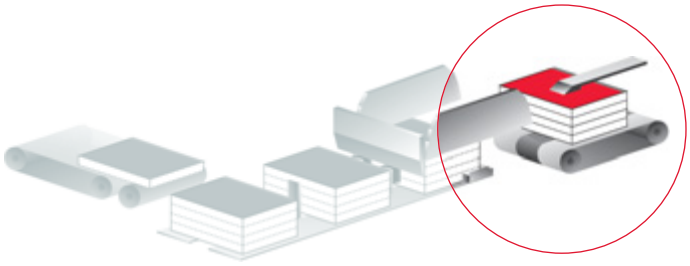
Products can be stacked in the magazine: the number of blocks in each stack is preset. A push-feeder unit takes over a stack, or a single product, pushing it spine-first along the infeed channel and into the trimming station.

If the feed is interrupted, the three-knife trimmer stops operating and switches automatically into wait mode to reduce wear on the machine and cutting sticks and extend knife life.

## ■ Alignment and trimming

The product is lifted gently onto the cutting table by a push-feeder. Smooth, controlled movements avoid the risk of damaging even delicate materials.

Products are aligned in the trimming station by the alignment pusher. Once the product is in position, the pushers are retracted and the pressing block is run down to hold it compressed and in place. Pressing block height is set by a motor actuator. The pressure can be adjusted for gentle handling of even the most delicate products.



▲ **Products are lifted and delivered by grippers**

Trimming – first the front and then the sides – is a smooth, tightly-controlled process. The movement sequence of the side knives is engineered to keep wear on the knives and the machine to an absolute minimum. The knife stroke for trimming magazines and brochures has been optimised as a pulling cut to reduce the risk of the paper tearing and buckling.

Air nozzles on all knife holders blow trimmings directly into the extractor ducts. This effective method of extracting trimmings prevents any subsequent problems with trimming residues on the transport belts or downstream machines.

## ■ Delivery

The trimmed products are picked up gently by a gripper and deposited on a conveyor belt. Belt speed is automatically synchronised with the trimmer's current operating speed.

# KOLBUS.
# Engineers dedicated to books

- Gathering
- Perfect binding
- Sawing and three-knife trimming
- Palletising
- Book production
- Stacking
- Board and cloth cutting
- Case making
- Embossing
- File production
- Conveying
- Packing

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