

KRONES Modular labellers

Multi-talented systems



 **KRONES**

Labelling with highest flexibility

KRONES Modular labellers

The KRONES modular labellers are multi-talented, because they are suitable for labelling with cold-glue, hot-glue and self-labels just alike. The universal labelling machine is of modular design and can be configured from individual assemblies. The cold-glue and hotmelt labelling stations or the self-adhesive label applicators can be connected to the main machine as required. When changing the labelling process, the Plug & Label® labelling stations can be replaced easily. It is also possible to use the cold-glue and self-adhesive labelling stations simultaneously or to change the labelling type after any time.

The modular labelling machines are available in different building types covering all output ranges. The machine's compact design saves space and makes it easily accessible from all sides. The machine concept provides a significant increase of efficiency and drastically reduces costs, particularly in terms of frequent decoration change-overs.



Topmodul with one Controll labelling station (left) and two self-adhesive labelling stations

Decoration possibilities

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KRONES modular labelling systems, with their multifarious decoration possibilities, offer new scopes of design developments to product marketing. The possibilities are almost unlimited: Pre-cut labels of any type can be applied to glass and plastic containers – this includes body, shoulder and back labels but also with neck ring and deep-cone wrap-around labels, as well as medallions. Also cylindrical containers can be applied with wrap-around labels from the stack or reel using hotmelt. The modular labellers' production range includes also self-adhesive labels. This way, containers such as waterproof plastic labels or transparent labels (no-label-look) fully comply with an attractive and trendsetting design.



Large and small containers can be equipped with a multitude of different labels.

Machine concept

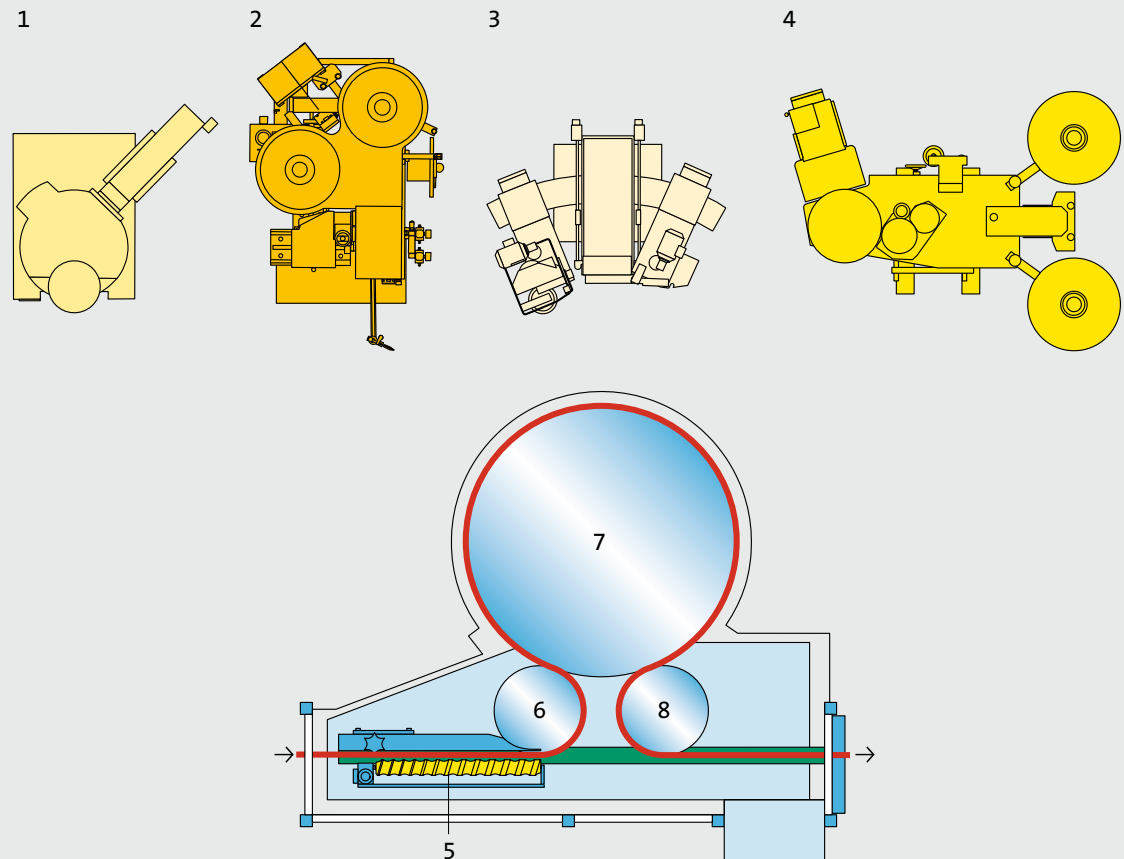
The KRONES modular labelling machines can be equipped with several of the same type or different labelling stations. The individual labelling stations are fastened on the machine's base frame and changed, if required. They each have a separate drive which is electronically connected with the main drive. This compact basic machine is easily accessible as it does not have a conventional table top. The machine front table with its infeed and discharge starwheels can be fully removed as of table diameters of 1,200 mm. Consistently employing the modular component principle enables an easy and cost-efficient transport of the machine to the production site for a quick start-up.

Each container plate on the container table is powered by a computer controlled actuator. The bottle rotations required for rolling on the labels are conducted according to a set program. When changing over to a new decoration, no mechanical cam must

be changed. Cold-glue and hot-glue labelling as well as the application of self-adhesive labels can be executed on one container table.



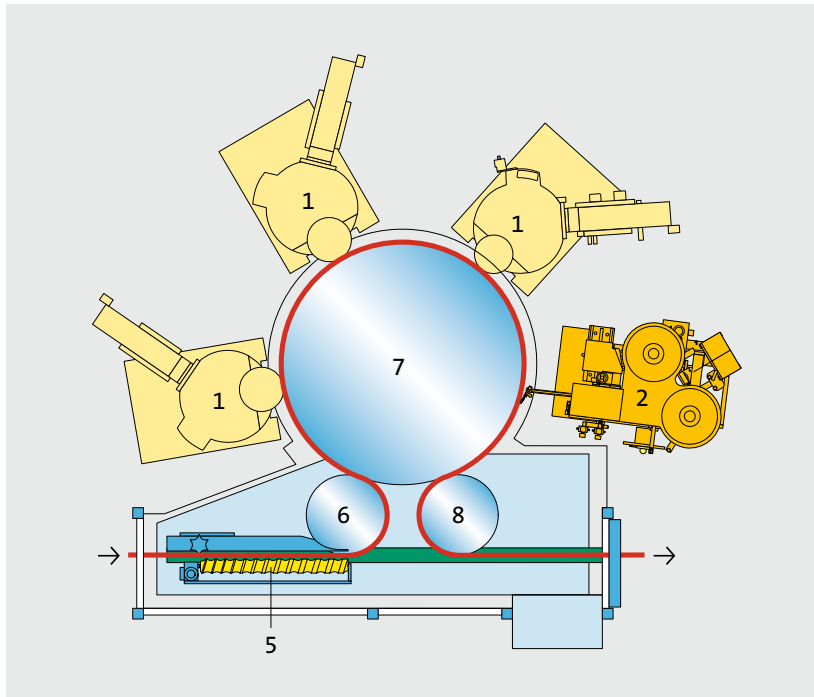
Container table with servomotors, protection type IP65



- 1 Cold-glue labelling station
- 2 Self-adhesive label applicator
- 3 Canmatic labelling station for pre-cut wrap-around labels

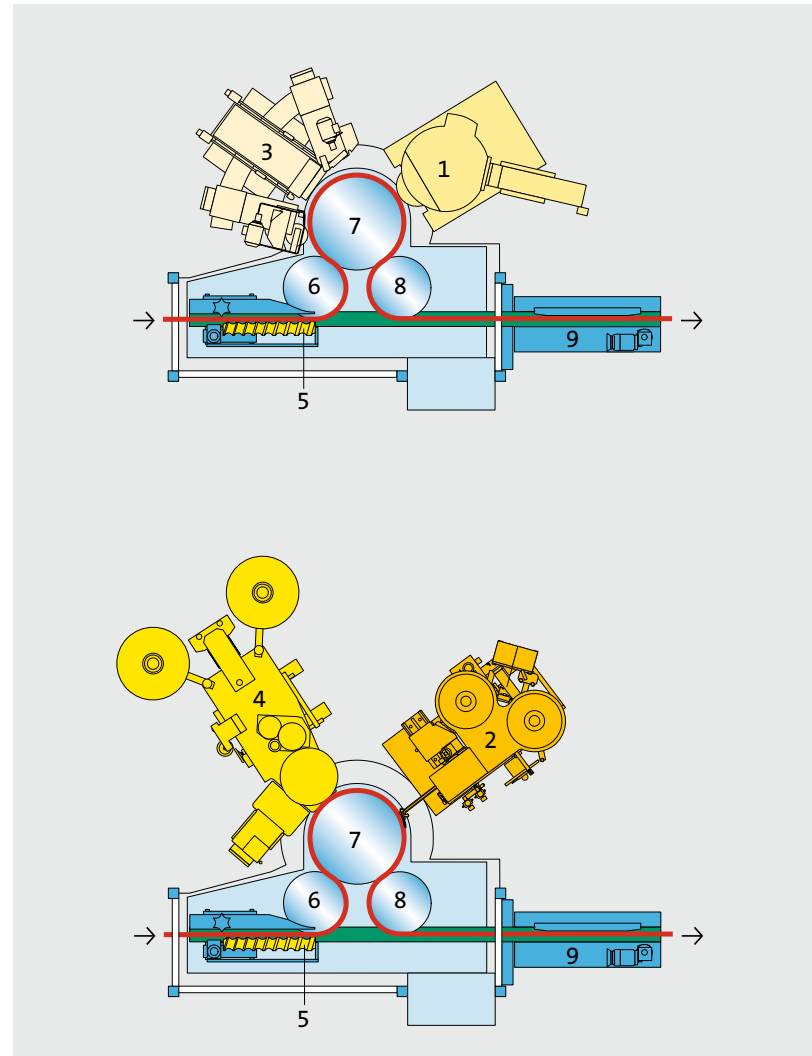
- 4 Controll labelling station for reel-fed wrap-around labels
- 5 Infeed worm
- 6 Infeed starwheel

- 7 Container table with servo-driven control system
- 8 Discharge starwheel



Topmodul (top)
Starmodul (centre and bottom)

- | | |
|--|--|
| 1 Cold-glue labelling station | 5 Infeed worm |
| 2 Self-adhesive label applicator | 6 Infeed starwheel |
| 3 Canmatic labelling station for pre-cut wrap-around labels | 7 Container table with servo-driven control system |
| 4 Controll labelling station for reel-fed wrap-around labels | 8 Discharge starwheel |
| | 9 Rolling-on unit |



Application

Labelling glass and plastic containers with pre-cut labels, wrap-around labels or self-adhesive labels

Output range

Depending on the version, maximum output between 6,000 and 72,000 containers per hour

Design features

- Modular machine concept
- Replaceable labelling stations by the Plug & Label® principle
- Servo-driven container plates
- Control cabinet integrated in the machine
- Lift guard in the area of the container table

Models

Ø of focus point

600 mm	Unimodul
720 mm	Prantomodul
960 mm	Starmodul
1,200 mm	Solomodul
1,800 mm	Topmodul
2,400 mm	Multimodul

- Colour touch-screen
- Operator panel is height-adjustable and can be moved around the machine with a carriage
- Access to the user interface via individual transponders
- User-friendly menu setup in the operating program
- Task-oriented user concept
- Simple input and calling of the labelling parameters, as well as adjustments for the main machine or the labelling stations – all on one operating terminal
- Easy-to-follow display of the current production data
- Malfunction display in plain text and graphic display
- Text displayed in the set language
- Interface to superordinated systems like LDS (Line Data Storage System) or LMS (Line Management System)
- Remote maintenance possible

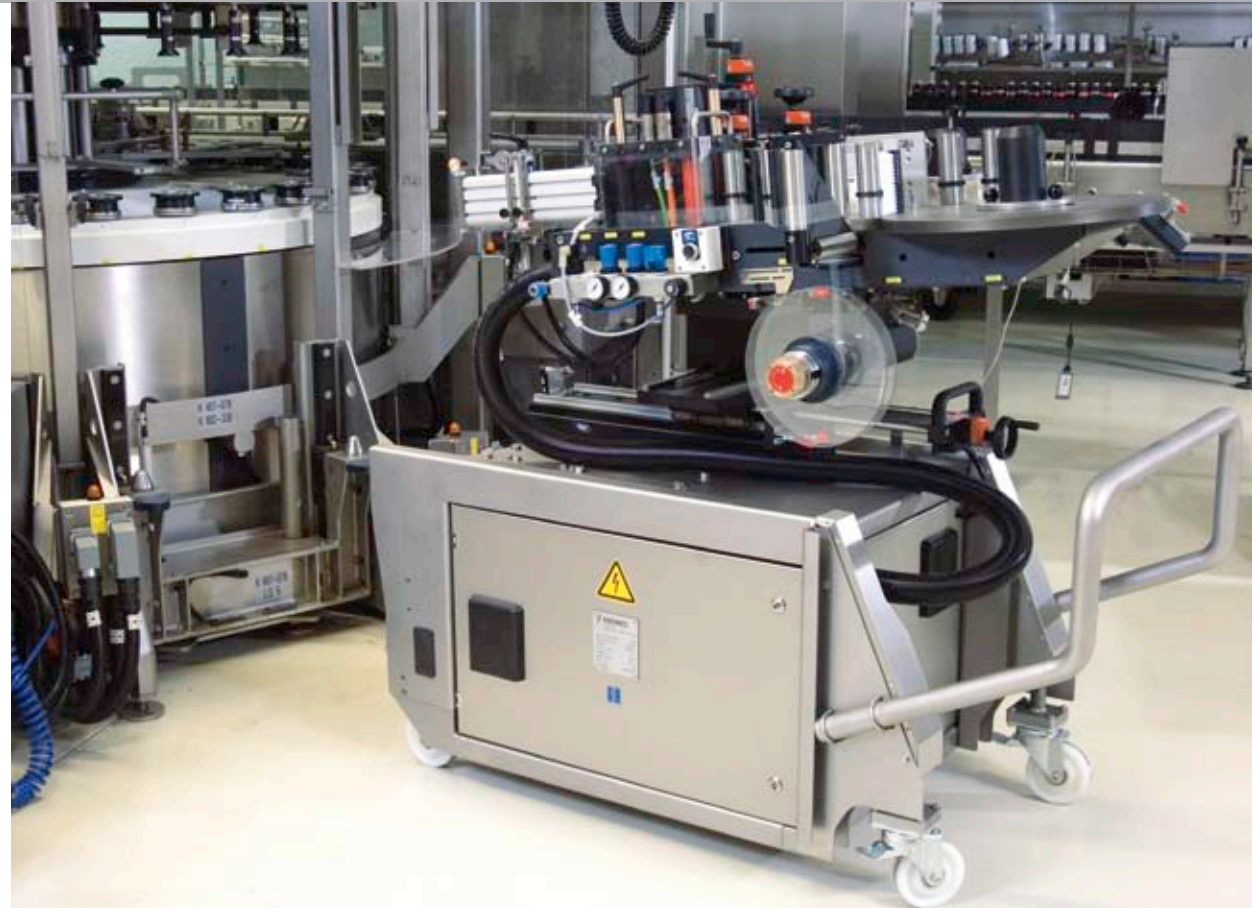


Change-over

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The machines can be easily changed to other container and label sizes. When exchanging a labelling station becomes necessary, it is first lowered to the ground via a motor. Then the labelling station is moved to a storing place on tightly fixed rollers. Now it can be maintained, tested, or changed over to other sizes separately, when required. The new labelling station is also moved to the machine on and raised via motor. Thanks to the height-adjustable docking, any labelling station can be positioned regardless of the conveyor height or possible irregularities on the ground. The set labelling station height is reproducible for future changes via type selection switch. In addition, only the electrical and pneumatical connections must be plugged-in or removed.

The Raptec handling parts are colour-marked and can be replaced in just a few steps without any tools. As an option, the curved guides can be equipped with a pneumatic central locking system and the starwheels with single-hand fasteners. The container guidance opposing the infeed worm, can easily be adjusted using a setup system with indexed stops. The height of the machine head is electrically adjustable. Centring bells and container plates are equipped with single hand fasteners for quick changeovers.



Changing a labelling station

Cold-glue labelling station

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The KRONES cold-glue labelling station processes pre-cut labels and it has a low-wear servo-drive. The housing is completely in stainless steel, and the cover has an ergonomically designed locking system. A special seal protects the driving unit of the pallet carousel from outside influences like spraying water, detergents or glue splashes. A backlash-free operation of the pallet shafts guarantees for a long service life of the components employed. The set-point adjustments of the glue roller can be reproduced at any time, because the glue film thickness is defined via a glue scraper with reference display. Inside the labelling station housing, all parts with bearings are lubricated by an oil circulating lubrication.

Changeovers to other labels or containers can be carried out quickly and without tools. To adjust the glue height, the labelling station's height is changed motor-driven. For horizontal changes, a cross-slide adjustment system is employed. All settings are reproducible with adjustment indicators or indexed stops.



*KRONES cold-glue labelling station
(left picture)*

*Backlash-free pallet shaft support
(right picture)*



Glue scraper adjustment with adjustment indicator

Self-adhesive label applicator

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The label applicator APS 3 is employed for the precise application of self-adhesive labels. It is equipped with a servo-drive which is controlled analogue to the machine speed. The unpeeled label carrier film is transferred to the container via a drive roller/driven roller mechanism. A pneumatically and mechanically operating loop buffer system at the infeed guarantees a continuous unwinding of the carrier web from the reel. Furthermore, only very little traction force is acting on the label web. The label is removed from the application wedge, and precisely transferred to the container. For an optimum adjustment of the label transfer and for container type changeovers, the entire labelling station with label reels can be adjusted via four, and optionally via five or six shafts. As each shaft is equipped with an adjustment indicator, all adjustments are reproducible.

Both label reels are mounted horizontally to the labelling station – thus a deflection of the carrier web with the labels is not necessary. An additional unit makes automatic carrier web splicing possible when changing from reel 1 to reel 2. With an optional unit, the end of the reel can be precisely determined via a sensor so that each reel can be fully used.

Outputs of up to 48,000 containers per hour can be achieved with the APS 3 labelling station. Thanks to its highly efficient servomotors and weight-optimised parts, the latest generation of APS 4 is designed for 60,000 containers per hour. In addition, the APS 4 labelling station operates with a supply tolerance of only +/- 0.2 mm at the application wedge (APS 3: +/- 0.5 mm), regardless of the production speed.



APS 4 self-adhesive label applicator

KRONES Canmatic labelling station

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The KRONES Canmatic is designed for the application of cut wrap-around labels using hotmelt. This labelling station has two independently operating hotmelt units with temperature control for individual glue temperature adjustments.

The first hotmelt labelling station applies a vertical strip of glue to the container. When the container passes the label magazine, the glue strip picks up a label which is wrapped around the container. At the same time the second labelling station applies glue to the trailing label edge for securing the overlap. The label wraps around the container once, and is glued together at the overlap. Both hotmelt labelling stations and the label magazine holding 9,000 labels can be pivoted around the container table and adjusted to each container diameter via indexed stops. The entire labelling station is adjusted to the exact labelling height via the height-adjustment system of the docking station.



KRONES Controll-HS labelling station

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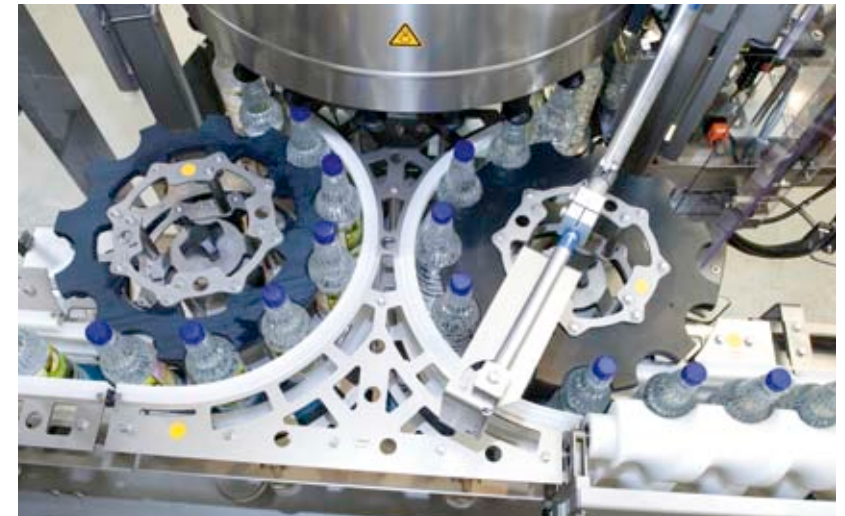
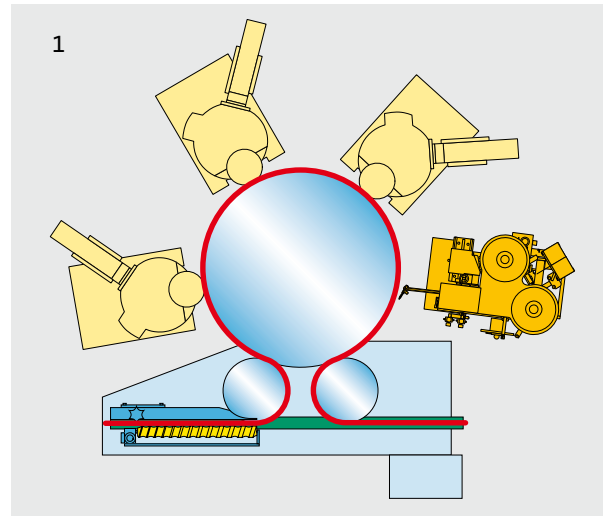
KRONES Controll-HS labelling station The Controll labelling station precisely applies cut reel-fed wrap-around labels to the containers. In this labelling station, servo-motors drive the feed roller for the label web, the cutting unit, the vacuum-assisted gripper cylinder, the gluing unit and the two reel holders. Thanks to the servo-drives, the labelling station pitch can be adjusted to the respective label length – thus, different label lengths and output ranges can be covered with the same labelling station. The gluing station can be exchanged enabling the use of different hotmelt types which are adjusted to the respective label material.

The label web is continuously removed from the label feed roller. The labels are cut precisely in the cutting unit. The P.E. sensor for cutting mark detection, the computer, and servomotor ensure that an exact cut-off point is maintained. Two narrow strips of hotmelt, which are applied by a heated glue roller to the leading and trailing label edges, glue the labels together. The hotmelt strip applied to the leading label edge ensures a precise and positive transfer onto the container. Because the container is rotating during transfer, the label is stretched to fit smoothly. Gluing of the trailing edge ensures proper bonding. With the Controll labelling station, splicing of the reel ends is effected automatically with only a slightly reduced machine output. The entire labelling station can be adjusted to the desired splicing height by selecting the respective type on the touchscreen. At the horizontal adjustment system, the adjustments can be precisely reproduced via counters.

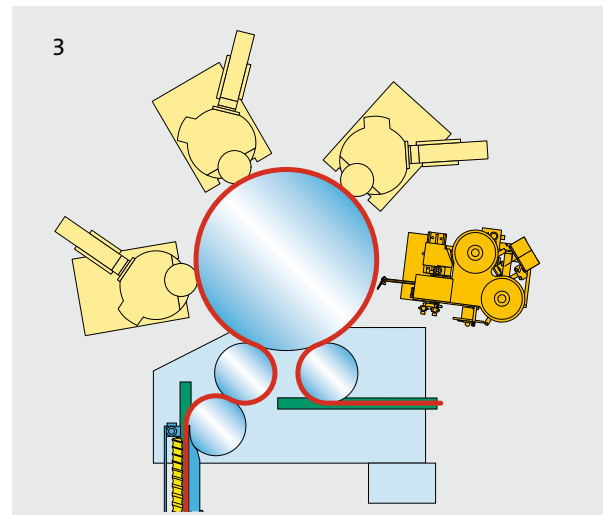
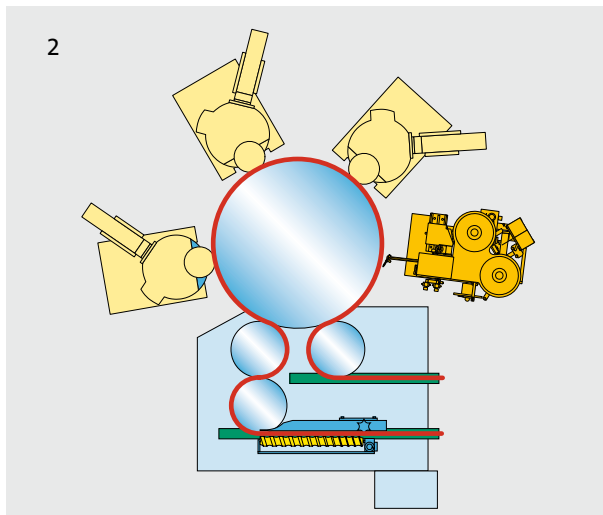


Layout

The front table of the modular labelling machine can be designed in different variations, to ensure optimum space utilisation for different bottling plants. Possible options are the linear, parallel, and angular arrangements.



Front table in linear arrangement



Layout configuration exemplifying the Topmodul

- 1 Linear arrangement
- 2 Parallel arrangement
- 3 Angular arrangement



Mechanical container orientation via spotting bars on the side-wall (left picture)

Orientation with camera detection (centre picture)

Photoelectric orientation system (right picture)

Mechanical container orientation

- Bottles with spot-bars on the base or side-wall: Mechanical orientation in a special infeed starwheel or at the container table
- Container with handle: Orientation in a special infeed starwheel or at the container table
- Bottles with swing stopper: Orientation in the infeed starwheel or at the container table

Orientation with Camera Detection

- Employment of CCD cameras
- Recognition of text, emblems, spotting bars, swing stoppers, or mould seam with glass bottles
- Signal to the central computer upon correct label position
- Container rotations on servo-controlled container plates

Photoelectric container orientation

- Sensors focus on swing stoppers, printed champagne caps or significant bumps in the bottle wall
- Signal to the central computer upon correct label position
- Container rotations on servo-controlled container plates

Additional equipment

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Laser date coding at the container table (picture 1).

Pointed neck foil application with brushing-on station (picture 2)

Tax strip application with Taxomatic (picture 3)

Garantomat for the application of shrink sleeves as tamper-evident seals (picture 4).

Coding/dating

- Printing of best before dates, inspection or code number, price or contents to the front of the label, the container wall, or the cap
- Employment of an ink-jet or laser printer
- Printing of different letter sizes onto almost any spot of the label or the container
- Coding/dating possible in all speed ranges

Neck-foil brushing-on unit

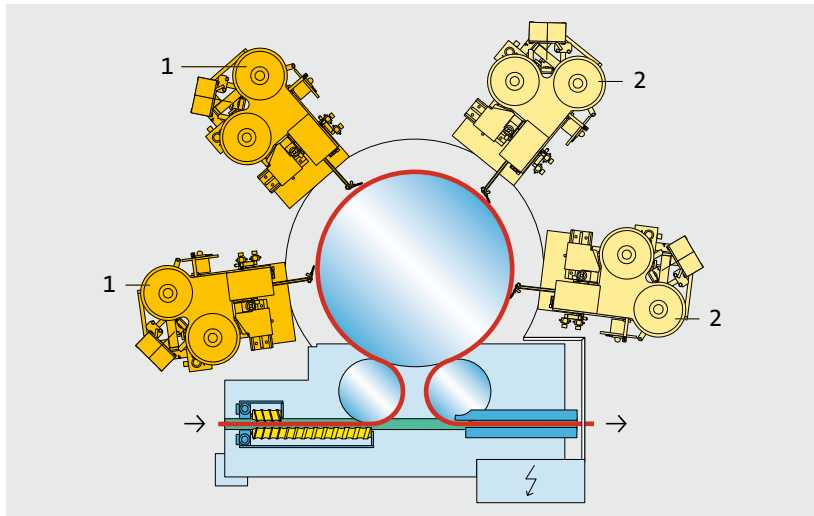
- Application of round and pointed neck foil via additional equipment
- Precise centring of foils above the body label
- Smooth brushing-on in the neck and cap area

Application of tax strips

- For the application of I or L shaped tax strips or tamper-evident strips.
- Coupling with the Taxomatic labeller for the application of L-shaped and U-shaped tax strips

KRONES Garantomat

- Application of shrink sleeves as tamper-evident seal
- Additional labelling station above the infeed or discharge of the modular labeller
- Unwinding of the sleeve from a reel, cutting of shrink sleeves in the labelling station



AUTO-Change Mode

- Two labelling stations per label installed for self-adhesive labels
- Precise recognition of the end of reel via sensor
- The first labelling station is stopped, when the end of the label reel is reached or if the label web tears
- The second labelling station takes over the labelling process during the production
- Subsequent reel change-over at the first labelling station easy to perform

- 1 Label applicators for label A
- 2 Label applicators for label B



Lid labelling

- Application of lid labels or can base labels in the infeed star-wheel via additional self-adhesive label applicator
- The label lids are maintained in their position via special press-on pads on the container table
- Gluing and rolling-on of tamper-evident strips

More additional equipment

- Automatic magazine loading system AMB
- Starwheels with gripping tools by way of infeed and discharge starwheels for handling different container diameters with a difference in diameter of up to 20 mm
- Additional label and container handling parts
- Clearly arranged handling parts trolley
- Cabinet for storage of machine accessories
- Spare parts kits for 2,000 or 4,000 operating hours



Main machine simulator

- Adjustment and maintenance jobs on labelling stations possible via simulator
- Practical test runs without the use of a main machine
- Testing settings for new label shapes

System expansions

KRONES Checkmat – Versatile inspection unit

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- Checks the labels for proper fit and presence
- Checks the labels' position and angle of rotation
- Checks printed data such as BBD or product codes for presence and correctness
- Recognises bar codes
- Checks fill level and container seal
- Discharge of faulty containers by means of retaining starwheel, clamping starwheel, or pusher



Your benefits

- **Flexibility**
Four different labelling systems can be employed in any combination on one machine.
- **Space saving**
The machines require very little space because labelling stations not needed are replaced, and because there is no need for a table plate.
- **User-friendliness**
The machines are easily accessible for maintenance purposes and they can be operated comfortably via the central touch-screen.
- **Efficiency**
Thanks to servomotor-controlled container plates, the containers are individually turned according to the design, and the brushing-on sections are used optimally.
- **Quick start-up**
The modular machine design facilitates positioning in the bottling and packaging line, and it enables especially fast start-up.
- **System-based saving effects**
Labelling stations for special decorations can be used alternating on several modular labellers.

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