

Modulfill Bloc FS-C

An innovation in can filling

 **KRONES**

Krones filler-seamer block for can

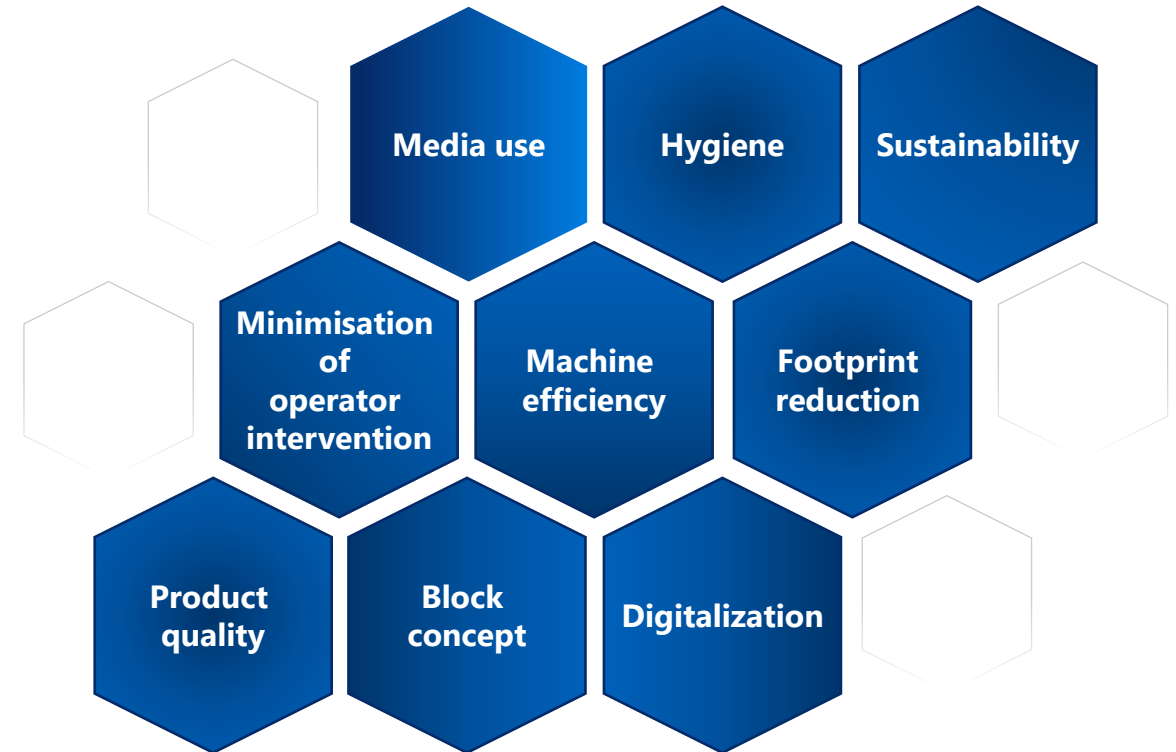
The most sustainable way to fill cans



Sustainability plays a central role in the Krones corporate strategy. This approach also forms the basis for all new and further developments in the area of filling technology. For example, we offer a unique, comprehensive concept for cans: A block solution for filling and seaming that sets new standards in terms of media efficiency, process stability and change-over times.

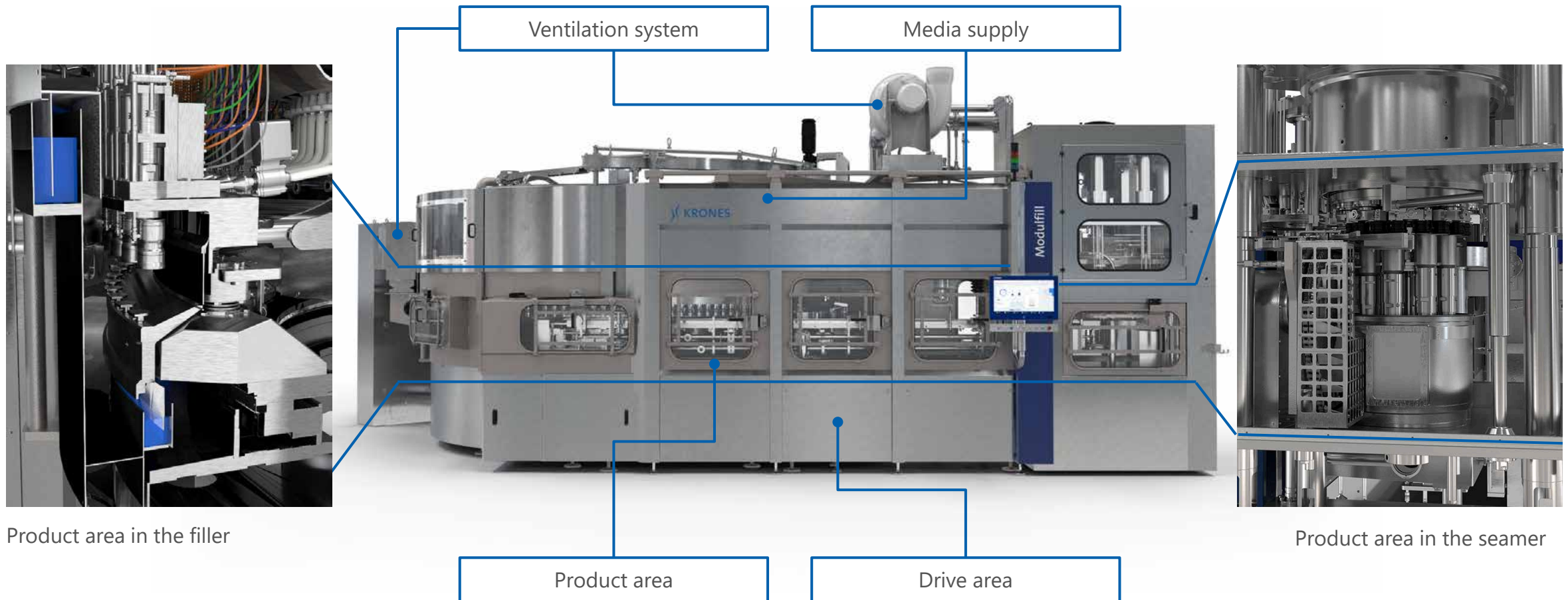
At a glance

- Block solution comprising can filler and seamer from Krones
- For outputs of up to 135,000 cans per hour
- Processes beer, carbonated soft drinks, water, juice (hot filling) and non-carbonated beverages
- Process technology according to the dry-floor concept
- Saving media thanks to a closed cleaning system
- Increased output thanks to minimised change-over times



Modulfill Bloc FS-C with compact clean room

The structure



Product area in the filler

Product area in the seamer

Modulfill Bloc FS-C with compact clean room

Improved cleaning



Krones has implemented a resource-saving concept in the newly designed cleaning system. Instead of using several media as before, Krones reduced both the quantity and the variance. The result: A closed cleaning system ensures time-delayed exterior and interior cleaning of the treatment area, filling valves and additional pipe system.

Benefits to you

- Comprehensive hygiene concept
- Time saving of approximately one hour per day*
- Reduced quantity and variance of the cleaning media: CIP and COP with the same medium
- Use of caustic and acid instead of foam
- No more CIP cups required

* For approximately three cleaning processes per day, depending on the shift model



Integrated CIP module (option)

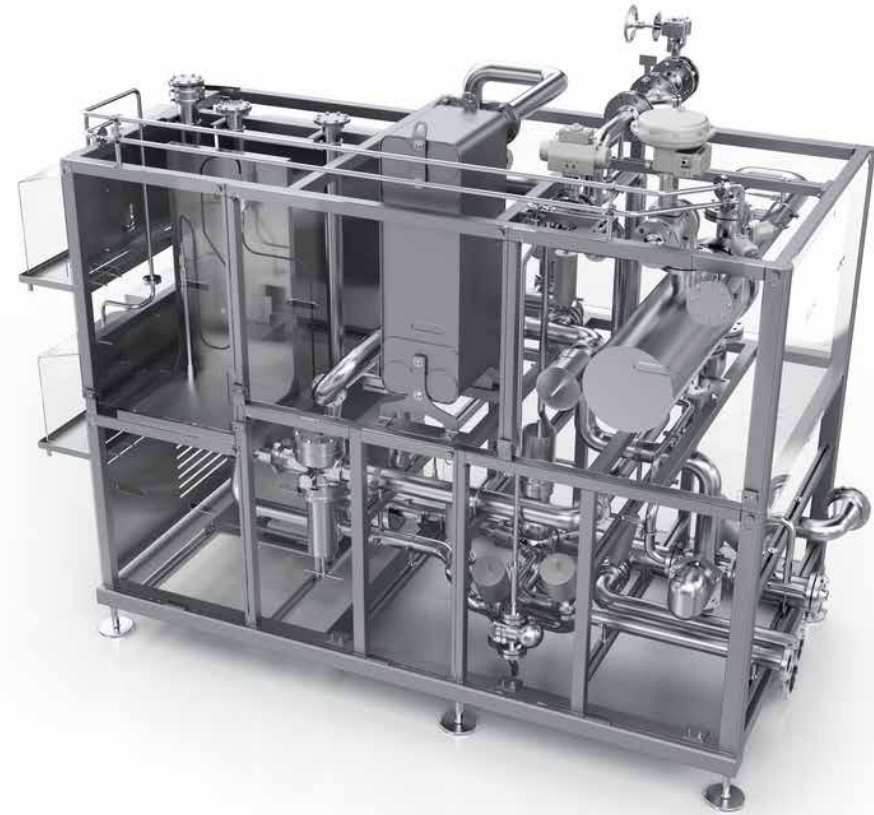
Without tank



The Modulfill Bloc FS-C with compact clean room has its own cleaning module. Special feature of this version: Conventional CIP media are used as cleaning media (liquid caustic/acid cleaning solutions). Cleaning with hot media is possible. The module works completely without a CIP buffer tank because the machine housing of the block also buffers the CIP fluid.

At a glance

- All media are provided just in time
- The control system is fully integrated in the filler
- Cleaning media is discarded following the exterior cleaning



Modulfill Bloc FS-C with compact clean room

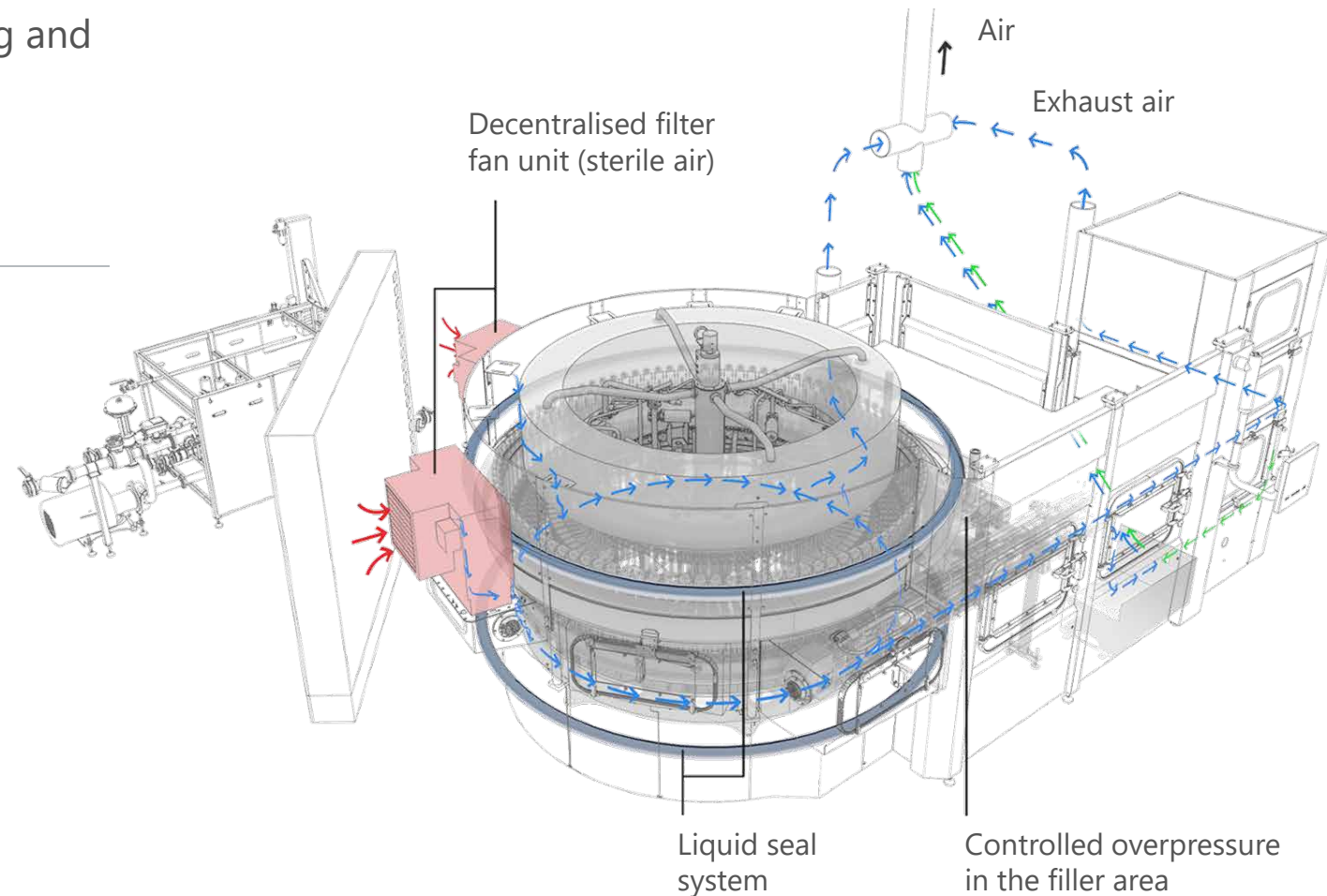
Minimisation of the sensitive filling and capping area



The Krones credo is to take a holistic view of the filling and seaming area and to design it as small as possible.

At a glance

- Volume of the small clean room: 8 cubic metres (compared to a filler with large clean room roof: 80 cubic metres)
- Air supply: approximately 1,600 m³/h
- Print: 5 Pa overpressure
- Filter: G4-F9-H14 filter
- Clean room class 5 possible
- Air quantity reduced
- Lower filter medium requirement



→ Air supply → Air → CO₂

Modulfill Bloc FS-C with compact clean room

The filling valve



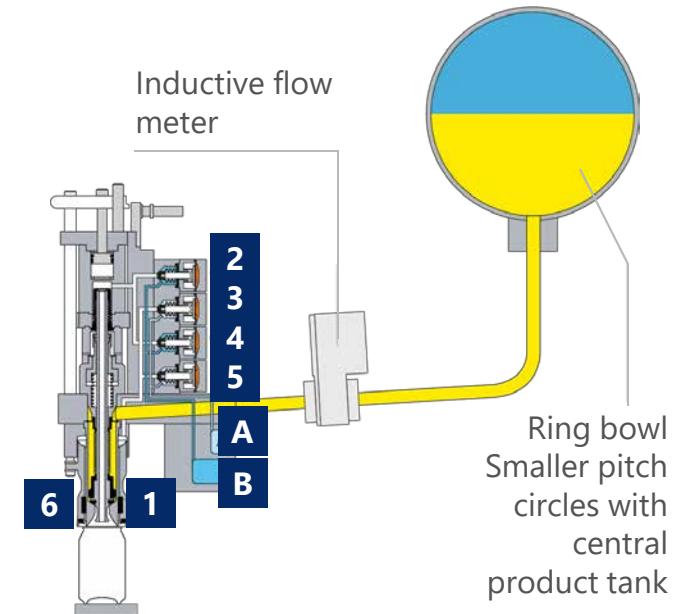
Filling valve method of operation

The can is fed to the filler and centred below the filling valve. The valve is pneumatically lowered onto the can for pressing-on. Thanks to a differential pressure chamber, the cans are centred and pressed onto the valve with extreme care.

The filling process begins immediately after flushing. An inductive flow meter monitors the fed filling quantity. The valve closes once the specified filling volume has been reached.

Filling valve for filling beer

- 1** Product stem
- 2** Flushing valve
- 3** Snifting valve, rinsing
- 4** Pressurisation and return gas valve
- 5** Valve for snifting the can headroom, centring bell
- A** Snifting channel
- B** Pressurisation channel



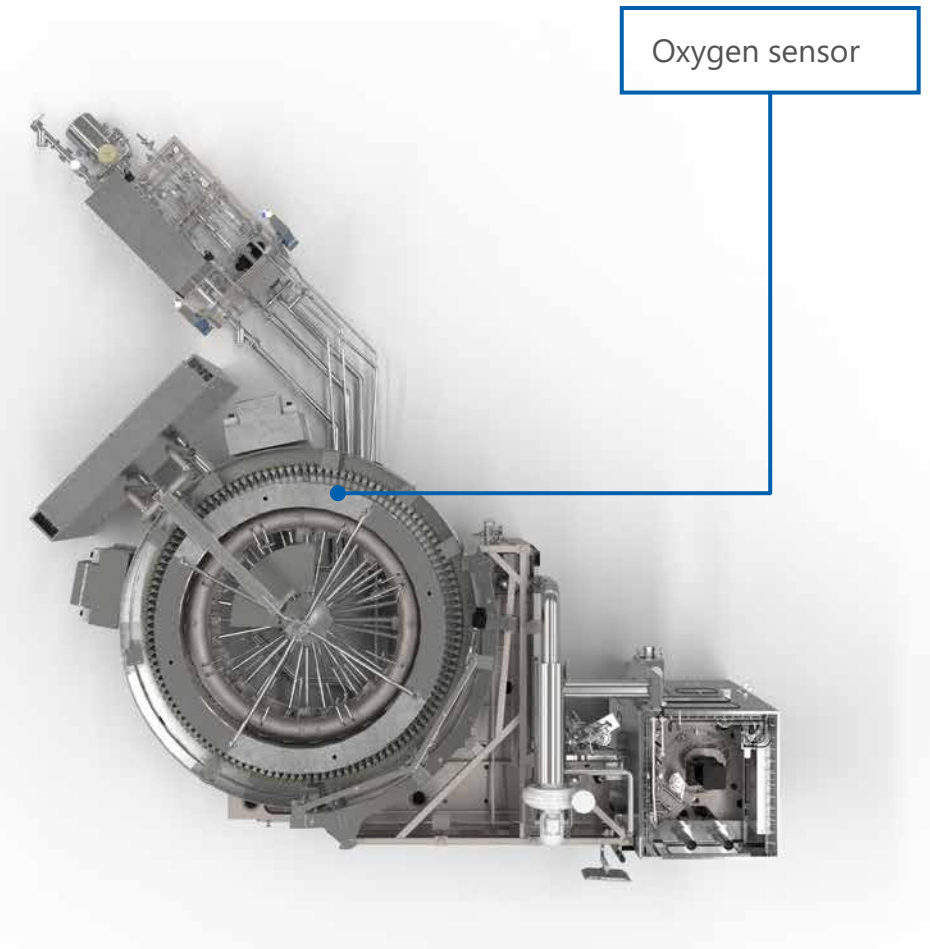
Modulfill Bloc FS-C with compact clean room

Intelligent process gas control system via an oxygen sensor



The highest product quality with the lowest media consumption - a balancing act when filling oxygen-sensitive products, which can be actively influenced in future.

This is because the residual oxygen in the gas chamber of the filler bowl is continuously measured and analysed. This allows the filling quality to be monitored with regard to oxygen pick-up during the filling process and regulated to the desired level. The goal is to achieve the lowest possible oxygen pick-up in the filled can with the lowest possible CO₂ consumption.



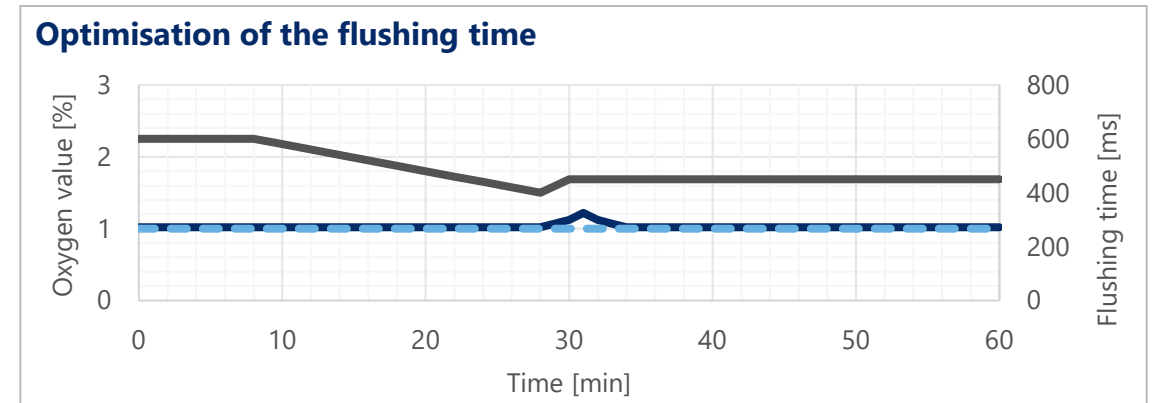
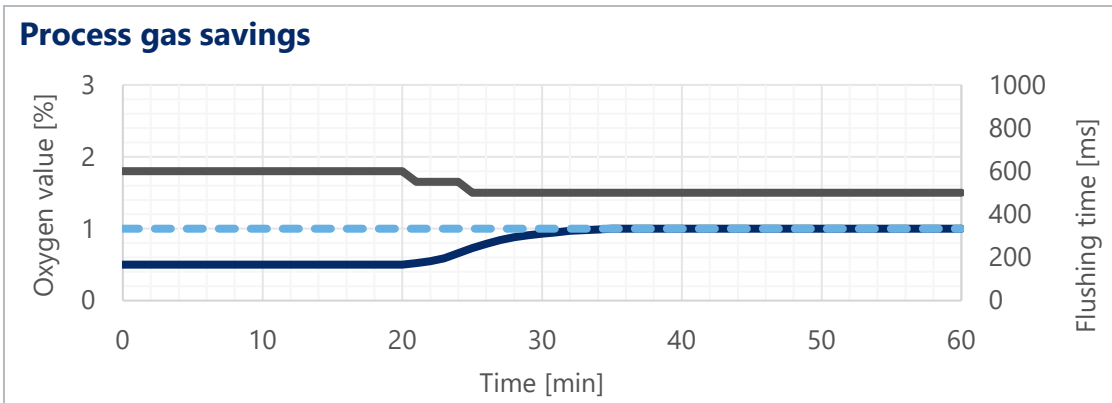
Modulfill Bloc FS-C with compact clean room

Intelligent process gas control system via an oxygen sensor



Benefits to you

- Revealing CO₂ savings potential
- Automatic quality control
- Detection of process faults
- Automatic optimisation of the flushing times



■ Oxygen value ■ Target value ■ Flushing time

Modulfill Bloc FS-C with compact clean room

Facts and figures



Modulfill VFS-C	
Performance	Up to 135,000 cans per hour ¹⁾
Efficiency	> 98 percent
Footprint	Reduced by up to 35 percent ²⁾
Cleaning media	Acid and caustic instead of foam
Cleaning time	Reduction by up to one hour ³⁾
Clean room class	ISO 5 possible
Volume of sensitive product area	10 percent compared to the large clean room
Product change-over with Krones Contiflow mixer	10 minutes

Modulseam						
Capping heads	4	6	8	12	14	18
Maximum output* 1) (cans per minute)	320	750	1,000	1,600	1,750	2,220 ⁴⁾
Adjustment range for can height (mm)	88-205	88-205	88-205	88-205	88-205	88-205
Can diameter (mm)	53-84	53-84	53-73	53-73 ⁵⁾	53-73 ⁵⁾	53-73 ⁵⁾

- 1) Depending on the respective can format, only with the Krones Modulseam
- 2) Compared to separate arrangements
- 3) For approximately three cleaning processes per day, depending on the shift model
- 4) Planned output for this size
- 5) Depending on the filler pitch

Moduleam can seamer

A seamer that is perfectly tailored to the Krones can filler



Filler and seamer from one manufacturer – it goes without saying that this set-up only offers advantages both for the production as well as for the operators. This exactly is the reason why Krones placed its Moduleam can seamer on the market in 2017. In the meantime, the machine has proven itself in the field and is consequently also part of the Modulfill Bloc FS-C for cans.

At a glance

- Perfect seamer for Modulfill VFS-C can filler
- Output: up to 135,000 cans per hour
- Comprehensive cleaning concept
- Included as standard:
 - Bubble breaker
 - Under-lid gassing with CO₂
 - Quick-change handling parts
 - Continuous servo drive concept
 - Central lubrication unit
 - Quickly adjustable quick-set cam for a swift change-over from steel to aluminium cans



Modulseam can seamer

Hygienic design



Best hygiene conditions

- Inclined table top for optimum cleaning
- All components in the process area are made of stainless steel
- Process area separated from drive and supply area
- Easy access for change-over and maintenance
- Cleaning through integrated nozzle system

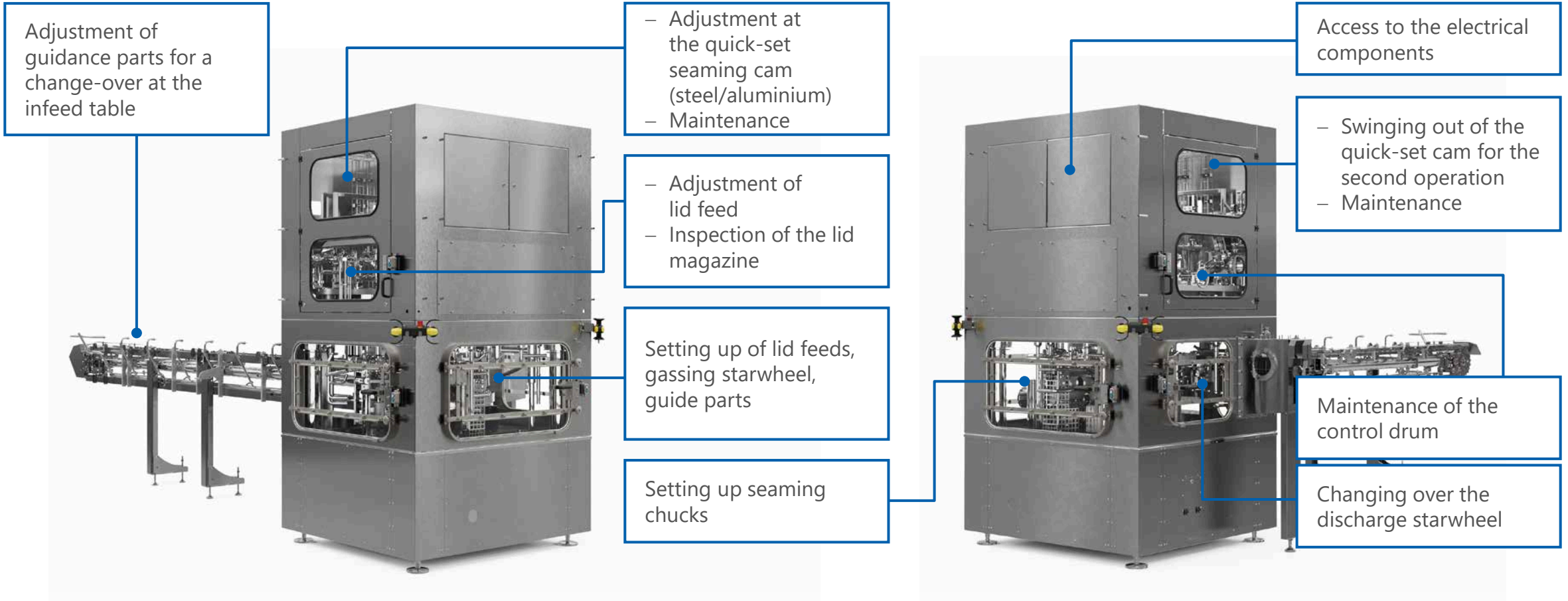
Operator convenience

- Simple change-over to another container
- Automatic height adjustment system
- Good accessibility from three sides as the media and power supply are not provided outside on the can seamer but inside the control cabinet and valve manifold, and/or on the seamer top



Modulseam can seamer

Access from all sides



Moduleam can seamer

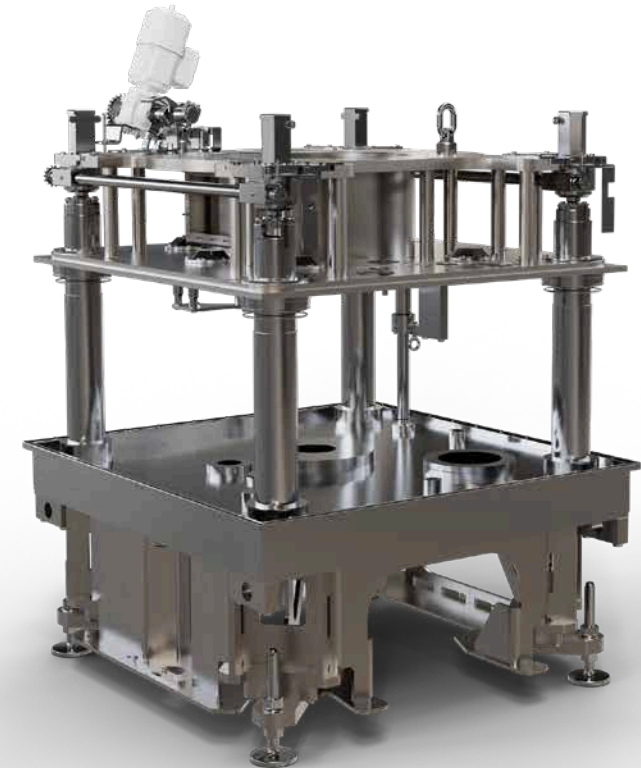
The machine bed – a stable base



The seaming process in the can filling sector not only requires maximum precision, but also places the highest demands on machine stability. The newly designed machine bed of the Kronos Moduleam is the answer to the dynamic loads that occur.

At a glance

- Sandwich design of the machine bed and base section
- Easy access to the bottom part thanks to the elimination of belts
- Slanted roof table with central discharge
- Four columns for height adjustment
- Integrated cable glands
- Exterior height adjustment
- Easy change-over of bearings and scrapers



Moduleam can seamer

Drive concept with servo technology



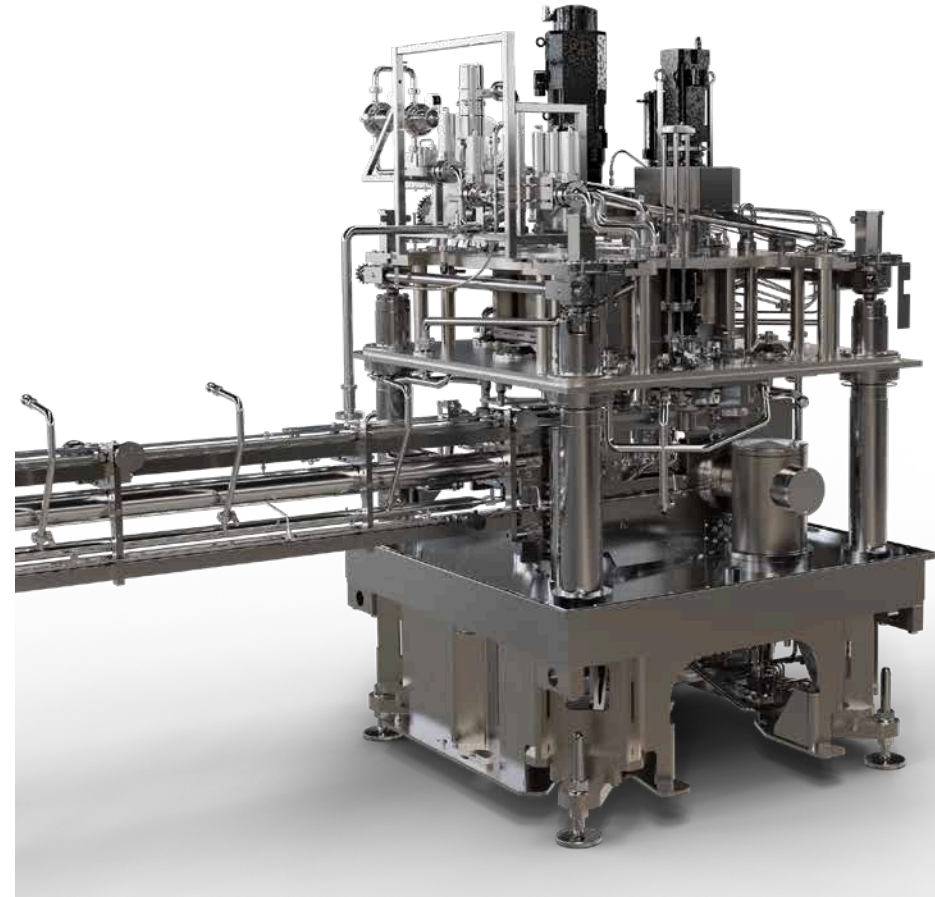
Servo drive technology has been proving its worth in the Modulfill series for over a decade. Based on this experience, Krones has adapted this concept to the Moduleam and is also following the idea of strict separation between the drive and process areas.

At a glance

- State-of-the-art drive technology on the market
- Separation of drives into functional areas
- Process and wear inspection

Benefits to you

- Separate drive of stacking worm, gassing worm and discharge
- Monitoring of the seaming process
- Best possible adjustment of the can transfer
- Gentle destacking of the lids



Moduleam can seamer

Structure of seamer bottom and top part

Open design for best possible hygiene and optimal cleaning result:
This summarises the benefits of the new bottom and top part of the seamer.

The lubrication system

- Design and implementation based on a proven concept:
Sealing arrangement (labyrinth), materials used and oil circulation adapted from the Modulfill VFS-C filler
- Good accessibility and maintenance options via access window in the bottom part of the carousel

Functionality and design of the can disc (quill)

- Influenced by the Krones expertise in capping technology
- Adaption of functional design elements for optimum centring during the closing process



Bottom part of the seaming carousel with housing

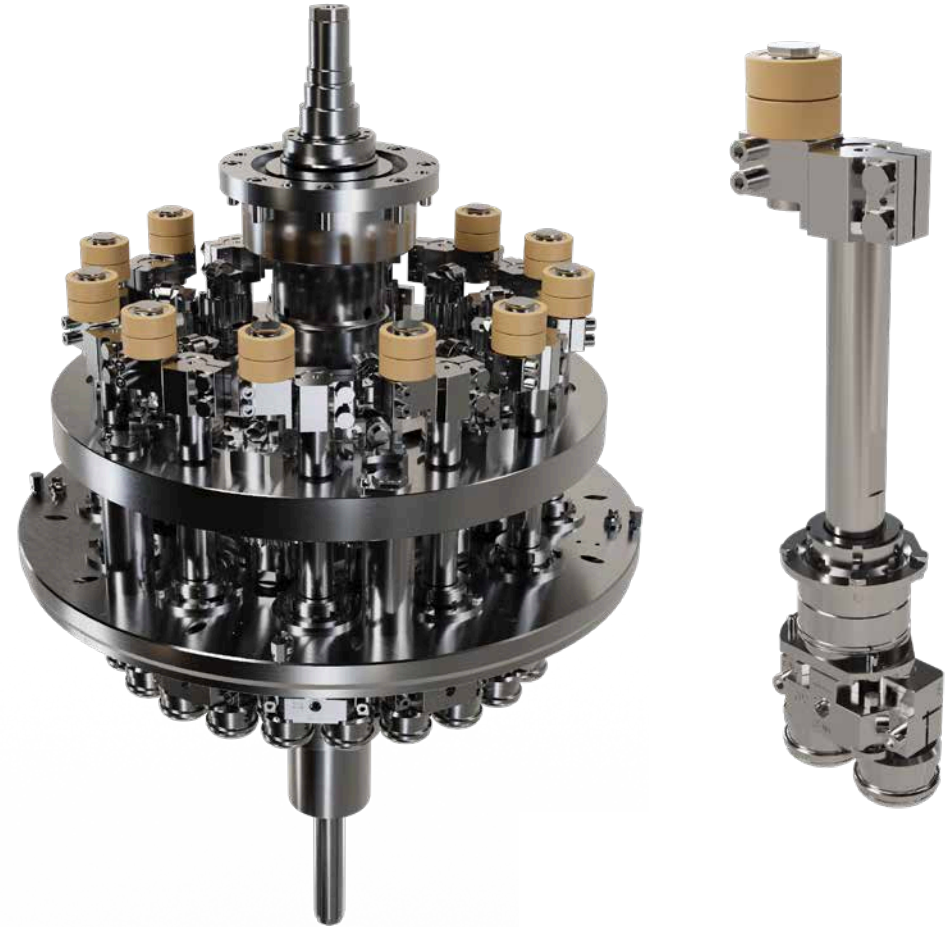
Moduleam can seamer

Structure of seamer bottom and top part



The seamer top part

- Can and lid handling in the seaming process
 - Optimisation of the seaming tools for quicker installation and dismantling
 - Design adjustments on the pressure plate for improved pressure distribution on the can and lid during the seaming process
- Lubrication system for the seaming tools
 - Integration of the oil sluice



Moduleam can seamer

Handling parts: Quick-change system and optimised hygiene



A wide range of products characterises many beverage companies. For the production this means smaller batches and an increasing number of containers to be handled and types to be produced. Maintaining machine efficiency despite numerous change-overs and retooling processes is often a challenge for line operators. With its seamer, Krones meets this challenge with new quick-change systems and hygiene optimisations

Benefits to you

- All handling parts can be cleaned with hot caustic or acid
- Faster and tool-free change-over of the guide rails thanks to adapters
- Quick-change system on the discharge starwheel based on the proven solution in the Modulfill VFS-C
- Convenient replacement of the gassing starwheel with support straps
- Lowered guide rail connected to the upper seamer section to reduce change-over times
- Reduction of screw fastenings and corresponding positioning for optimum accessibility



Benefits to you



Everything from a single source

With its Modulfill Bloc FS-C design including compact clean room, Krones is providing a block solution for the can filling and seaming of products with high demands on hygiene (e.g. without the use of preserving agents).

Improved cleaning

A closed cleaning system ensures time-delayed exterior and interior cleaning of the treatment area, filling valves and additional pipe system. The use of caustic and acid instead of foam means that both the quantity and variance of the cleaning media are reduced.

Minimisation of the sensitive filling and capping area

Thanks to the isolator design, the sensitive product area can be reduced to a minimum compared to conventional filling technology. Decentralised filter units ensure controlled overpressure in the filler area.

The fastest change-over of its kind

Numerous features ensure that the change-over to new sizes or types is quick and requires little manual intervention:

- Change-over from steel to aluminium cans is possible in only a short time thanks to the quickly adjustable quick-set seaming cam: Settings are reproducible and the change-over can be performed in less than five minutes.
- Change-over to other container sizes is also possible in just a few steps thanks to automatic height adjustment system. The entire parameter management and height adjustment of the entire block is done via the filler's HMI, including, for example, the position of the bubble breaker.
- Proven quick-change systems from the Modulfill VFS-C have also been adapted to the Modulseam can seamer.

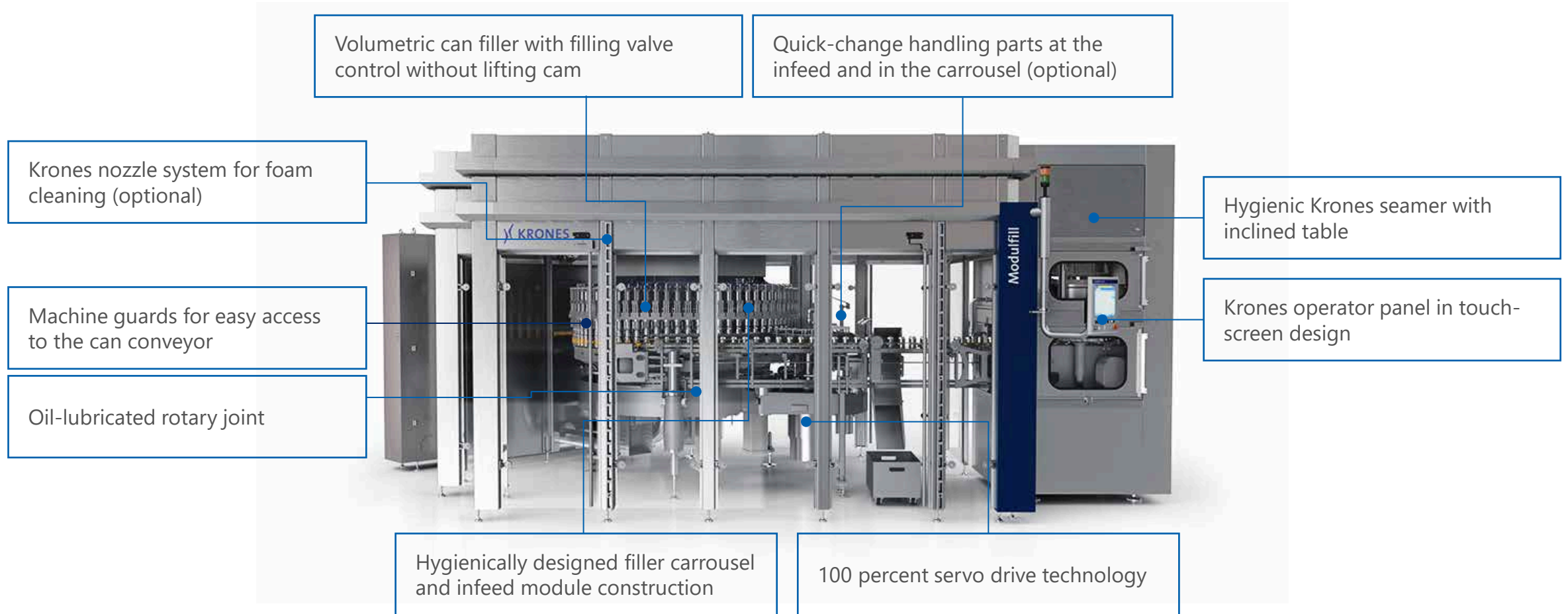
New machine enquiry

You can easily enquire a non-binding quotation in our [Krones.shop](https://www.krones.com/shop).



Krones filler-seamer block for cans

Alternatively with stand-alone guards



Certified ecological efficiency

Machines with enviro seal



At Krones, the enviro label stands for excellent ecological efficiency. Products that bear the enviro label have proven in an objective test procedure that they efficiently use energy and media, and that they produce in an environmentally-friendly way. The requirements are defined by the EME standard that has been developed by TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure, too, has been certified by TÜV SÜD as an independent expert. Therefore, you can be sure that: an enviro label stands for ecological efficiency.

The Modulfill VFS-C enviro stands for the following

Energy efficiency

- Use of the latest PM drives and pumps
- Air dryer with dew-point control (if required)

Media efficiency

- Reduced CO₂ consumption
- Minimised water consumption



Everything from a single source



Training courses at the Krones Academy – trained personnel will increase your line efficiency

The multifaceted offer by the Krones Academy ranges from operation, servicing and maintenance courses through to management training. We will gladly also create your individual training programme.

KIC Krones lubricants – for each production step

Whether for gears, chains or central lubrication systems – our greases and oils are true all-round talents. They can reach every lubrication point, protect your line and ensure gentle treatment for your products thanks to their food-grade quality.

Krones Lifecycle Service – Partner for Performance

It goes without saying that also after the purchase of new machines, Krones takes care of your lines: The Krones LCS experts are always there to help you reaching your goals and turn your wishes into optimal LCS solutions.

High-quality components from Evoguard and Ampco

Are you looking for shut-off, separation or control valves? For hygienic or aseptic applications? Would you like to have pump technology that perfectly fits into your machines? You will find exactly what you are looking for at Evoguard and Ampco Pumps. The two Krones subsidiaries cover the entire spectrum of process technology components that you need for high-quality production.

**SOLUTIONS
BEYOND
TOMORROW**

