



Double-end washers

Lavatec D4/D5 and LavaClassic D4/D5



Give bottles a shiny appearance

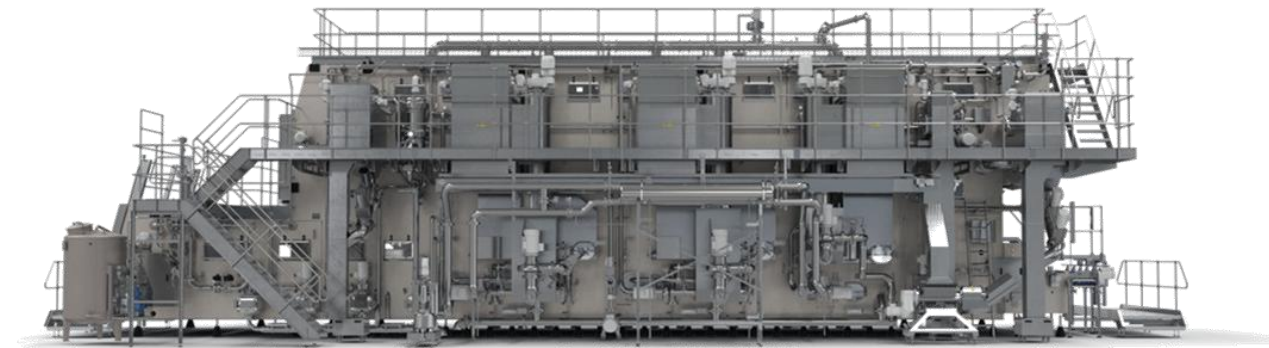


As individual as the jobs they master: The Lavatec D and LavaClassic D double-end washers comprise a modular system containing freely combinable components.

Regardless of how you specifically design your machine: It will always impress with its perfect cleaning results and economical use of resources.

At a glance

- Freely combinable modular component system, individually arranged
- Economical consumption of resources through use of state-of-the-art technologies (improved CO₂ footprint)
- Different pre-treatment options – including special solutions such as sand and glass fragment removal
- Main drives with servo controller
- Easily accessible central pipe system
- Optimum accessibility thanks to user-friendly catwalk concept
- Optional: Microfiltration in the main caustic system for a lower use of chemicals and higher machine availability
- Process optimisation thanks to latest digital products



Lavatec D5

Individual machine concept for every output range



Thanks to their modular component system and individual technical configuration, double-end washers from Krones can meet any challenge. The LavaClassic and Lavatec series cover an output range of 10,000 to 133,500 bottles per hour. When doing so, the latest safety standards are always observed and the interfaces for a higher-level automation system integrated.

LavaClassic D4/D5

The reliable cleaning professional

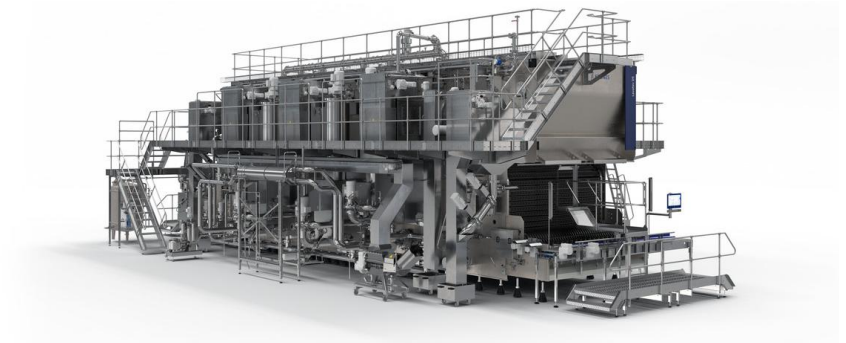
- Straightforward bottle washer with proven technology
- Different pre-treatment and post-treatment zones for all requirements
- The right decision for a limited budget



Lavatec D4/D5

The economical solution for water and energy management

- Meets the highest technical demands for effective and efficient cleaning
- Maximum pre-treatment and post-treatment
- Minimum operating costs
- Complete post-treatment area in "Clean Design"



Layout of a double-end bottle washer



Infeed

- 1** Double-finger infeed with overload protection for highly efficient bottle infeed

Modular pretreatment

- 2** Efficient pre-washing and pre-heating ensures a long service life for the caustic and minimises the use of resources

Modular caustic tanks

- 3** Single or double loops for the caustic tanks with individual temperature stages and optimised mechanical cleaning through interior spray cleaning

Tubular heat exchanger

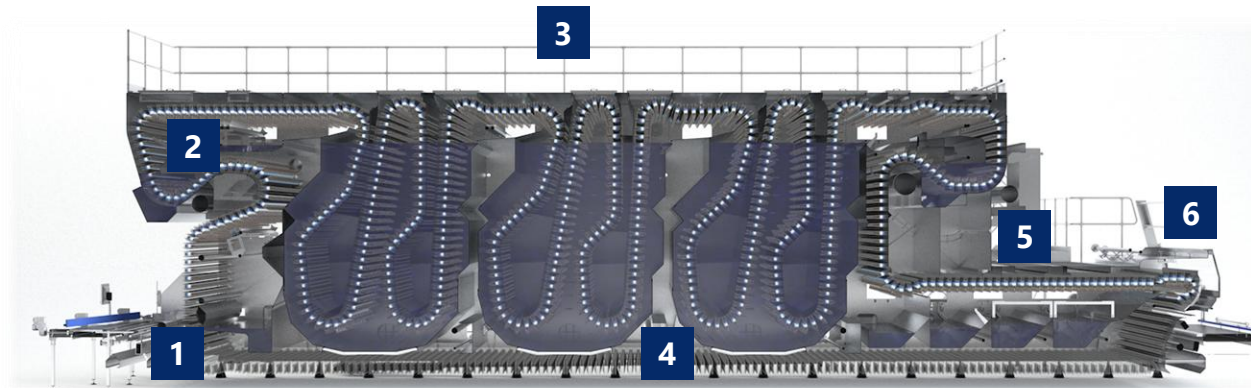
- 4** Heat distribution via low-maintenance external tubular heat exchanger

Post-treatment

- 5** Bottle rinsing system with fresh water uses state-of-the-art process technology to minimise fresh water consumption

Discharge

- 6** A discharge finger with overload protection picks up the bottle without a gap and sets it down gently on the conveyor



Clean Design for the most stringent hygiene demands



The revised Clean Design concept (CD) also meets the highest demands on quality and hygiene. Thus, the machine itself shines with cleanliness!

Optimum access

- Reduced cleaning time
- Thanks to the easy-to-open access points and the optional automatic lifting windows, personnel demands for cleaning are low



Simple and thorough cleaning

- Bottom troughs mounted with an incline
- No dead corners in the shape of the basin
- Short drying times
- Zones can be cleaned quickly



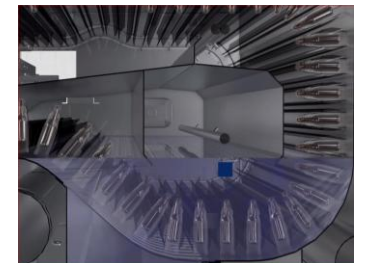
Self-cleaning pump sieves (only for CD post-treatment)

- Complete emptying of the pumps
- Low personnel requirements
- Short cleaning time
- Self-cleaning filter



Fine post-caustic filtration (For CD post-treatment only)

- Low dirt load
- Protection against fibre entrapment into the sensitive water zones



Highly intelligent servo control



Makes digitalization in engineering practicable: the modern drive system with highly intelligent servo control.

Benefits to you

- Permanently checks all information about the drives
- Supplies intelligent and transparent information for diagnostics and makes expert knowledge easy to understand for the user
- Gives clear indications for how to get the system back up and running quickly after deviations
- Cuts the total cost of ownership (TCO) by up to 20 percent through improved energy efficiency and longer maintenance cycles



Servo infeed 2.0*

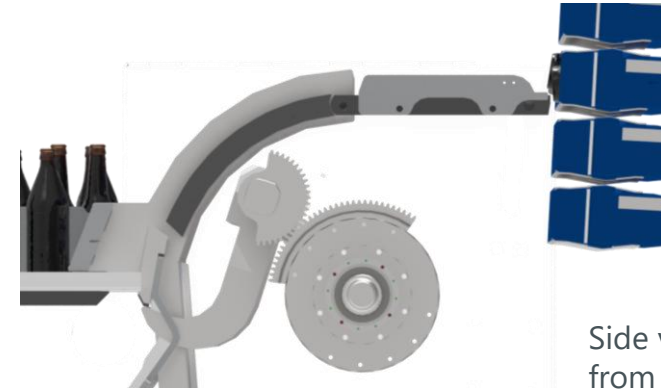


With our optional bottle infeed with servo drive technology, the infeed curve can be set individually for each container – and thus generate maximum flexibility.

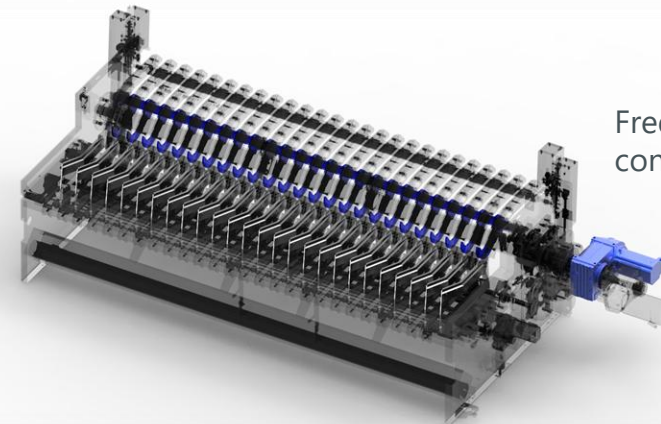
Benefits to you

- Torque monitoring: Torque curve specifically designed to suit the bottle shape and weight
- User-friendliness: Easy fault reset through independent control of finger shaft and bottle transfer unit
- Gentle bottle handling: Reduced pressure on the bottles through controlled conveyors at the infeed

* Usability must be tested by the engineering department



Side view of the double shaft from infeed 2.0



Frequency-controlled infeed conveyor

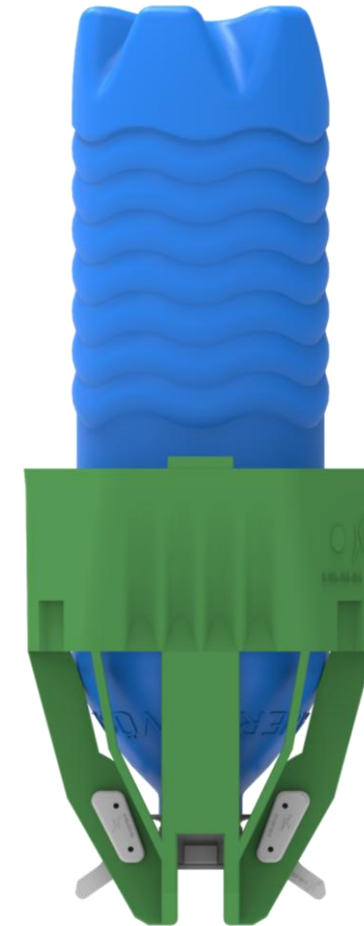
PET-Lock



PET bottles have the advantage of being considerably lighter. This should not cause a disadvantage during cleaning. The option of the new PET bottle locking device means the jetting pressure does not need to be reduced.

Benefits to you

- The jetting system does not require pressure reduction
- Increased mechanical cleaning
- Optimum cleaning by holding the bottle in place
- No sliding on the plates
- An unlocked bottle is rejected



Digitalization



Connected HMI – state-of-the art operator interface

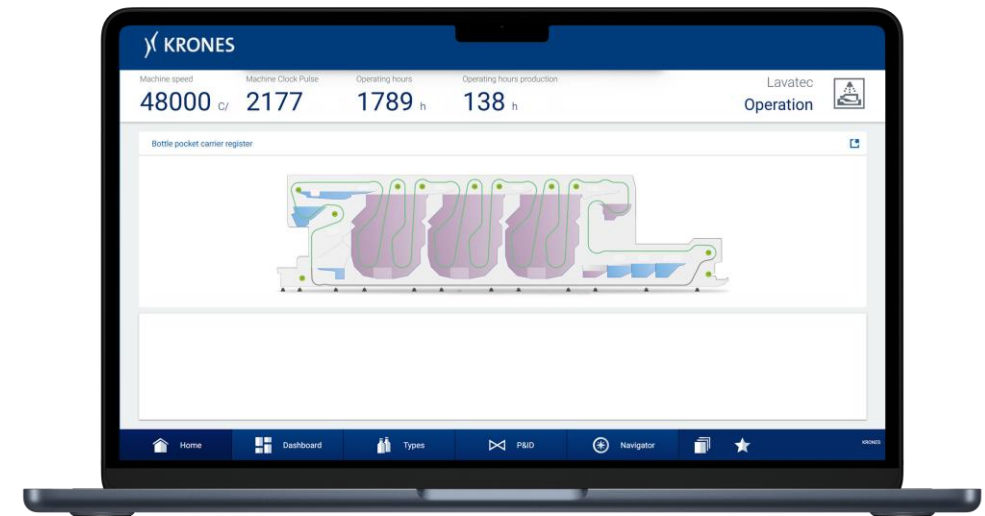
- Direct access to more information and data
- Individual design of the interface through widgets
- Multi-touch-screen and click-and-response feature

Interfaces for digitalization products

- Shopfloor Guidance
- Line Control
- Krones Operating Platform
- Connected Line

TIA – future-oriented machine controller

- Use of control components with a long service life
- Easy and fast implementation of new software packages



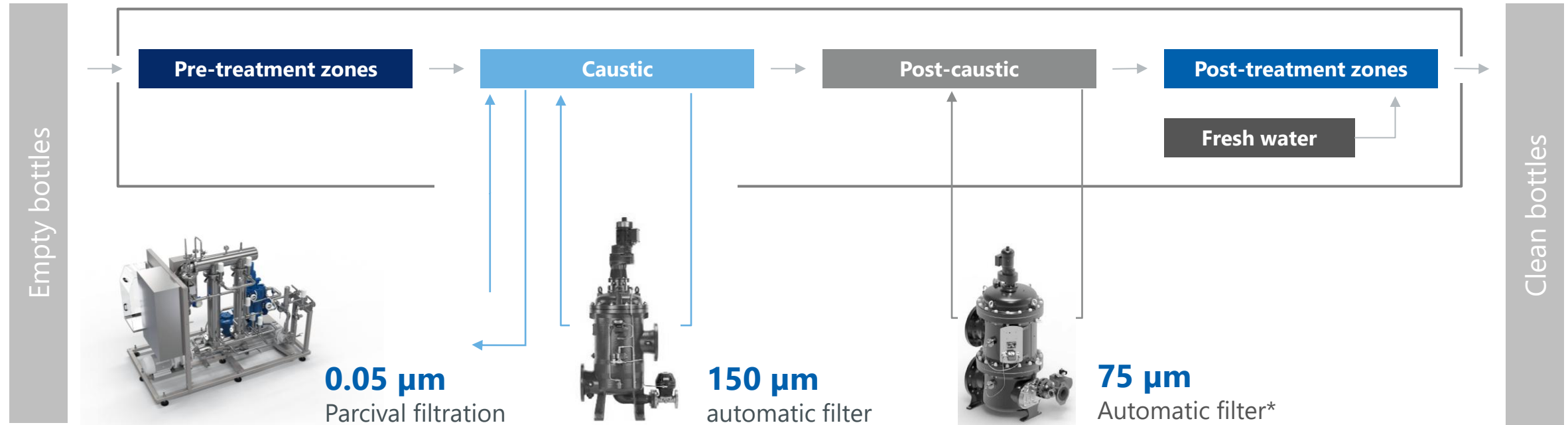
The new sectional view (D5) in Connected HMI

Optional filter systems



The entry and carry-over of dirt contaminates the cleaning media, which causes higher consumption of cleaning media such as caustics and additives. In order to permanently maintain the quality of the cleaning media and to reduce the demand, we offer options for reprocessing.

Bottle washer



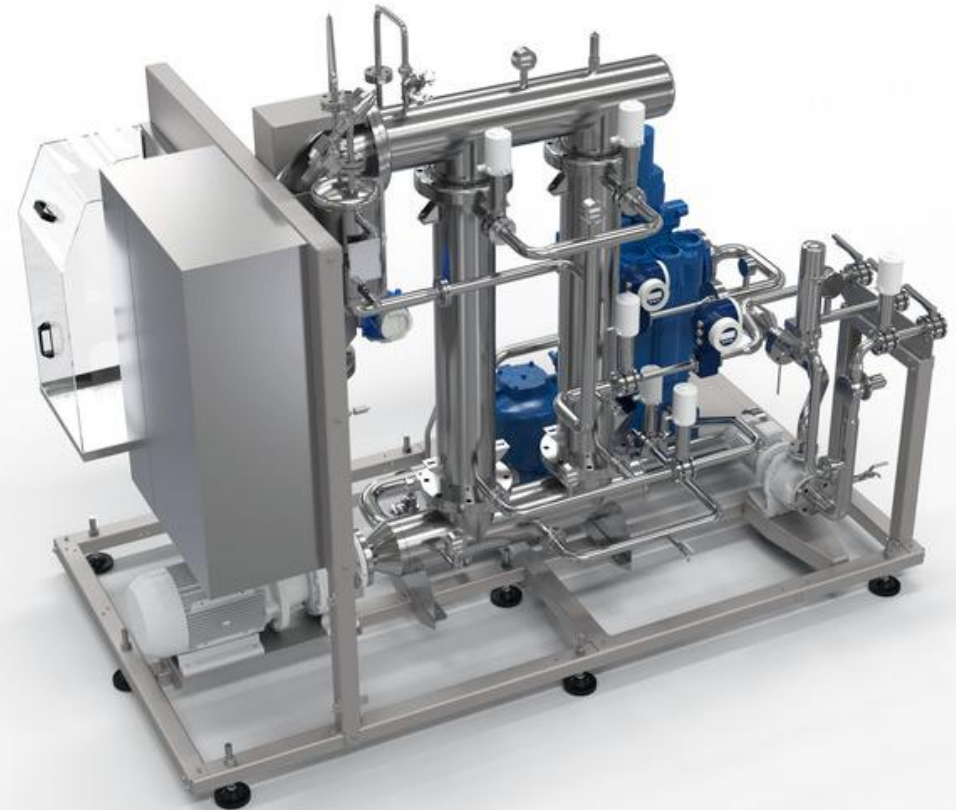
* Lavatec D4/D5

Parcival microfiltration system



Benefits to you

- Process integration in the main caustic and post-caustic possible
- Increased product safety and quality
- Permanent reduction of the microparticles in the following zones
- Significant improvement of the caustic quality
- Longer caustic service life
- Hygienically better condition of the water zones
- Reduction of the chemical oxygen demand (COD)
- Caustic management by means of turbidity sensor
- Can also be retrofitted into existing lines



Parcival filter skid

Reduced consumption data thanks to optional equipment packages



For fresh water savings

- Pressure-regulating valve for limited fresh water throughput
- Fresh water cooling via glycol
- Use of innovative carrier systems

For thermal energy savings

- Complete insulation of the machine
- Use of heat recovery
- Optimised pre-heating of the bottles in a pre-heating module

For electrical energy savings

- Strategic energy management
- Use of innovative carrier systems

Alternative heating concepts

- Connection of the system to a combined heat and power station
- Heating via a solar thermal energy system
- Use of heat pumps
- Direct gas heating



Benefits to you



Microbiologically up to date

The post-treatment section is designed in Clean Design. The double-end design provides spatial separation between contaminated and clean bottle flow. Together with our innovative filtration concepts, it thereby meets the highest hygiene demands.

Absolutely efficient

Thanks to the automatic filtration of contaminants, resources are used sparingly. At the same time, the modular machine layout can be individually customised to the bottle and label quality.

Sparing use of resources

The Krones bottle washer surprises with its economic water and energy budget. And it proves that you do not always need lots of chemicals to achieve highest hygiene standards.

Digitally up to date

The latest technology used on the touch-screen and in the PLC ideally equips our machines for the new age of digitalization. For this purpose, we offer a wide portfolio of digital products for the line and machine, as well as individual setting options directly on the touch-screen.

Operation made easy

All double-end bottle washers offer easy access to all components so that cleaning and maintenance can be performed as quickly as possible.

New machine enquiry

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



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.

This is why the Lavatec series is enviro-classified:

Energy efficiency

- Low consumption of thermal energy thanks to the use of insulation, regenerative heat transfer devices and lattice or lightweight carriers
- Economic water consumption thanks to optimised water routing, pressure regulation and fresh water cooling concepts

Environmental compatibility

Minimised water and lubricant consumption using innovative technologies



Everything from a single source



Training sessions at the Krones Academy – trained personnel for an increased efficiency of your line

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

Krones Lifecycle Service – Partner for Performance

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

KIC Krones cleaning agents make your machine shine

An immaculate production environment is essential if your product is to shine. KIC Krones provides you with the optimum cleaning agents and disinfectants for each individual production step.

KIC Krones lubricants for each production step

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

**SOLUTIONS
BEYOND
TOMORROW**

