

KRONES Double-end bottle washers

Lavatec D4/D5 and LavaClassic D4/D5



Gives bottles a shiny appearance

In the new modular double-end bottle washer, the different machine types are fused into a single assembly unit. The Lavatec D and LavaClassic D series are as individual as the requirements of our customers and impress with perfect cleaning results combined with frugal use of resources.

At a glance

- Freely combinable modular component system
- Different pre-treatment options – including special solutions such as sand and glass fragment removal
- Separate caustic tanks
- Synchronous or shaft drives possible
- Optimum accessibility and revised walkway concept
- Clean Design post-treatment zones
- Easily accessible central pipe system
- Frugal use of resources thanks to the use of state-of-the-art technologies



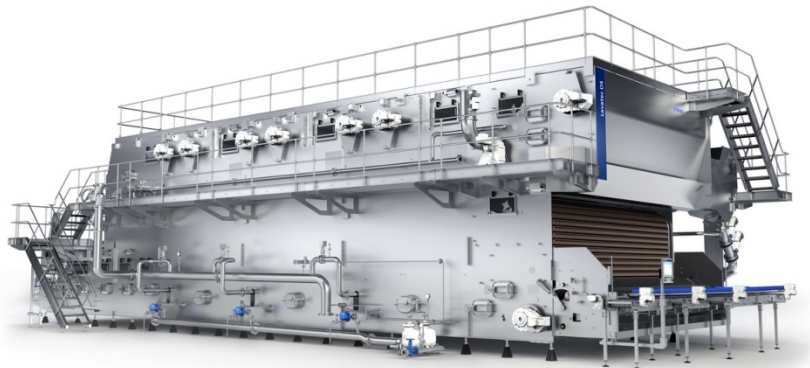


Individual machine concept for every output range

From small to large: Thanks to their modular component system, the double-end bottle washers in the Lavatec D series cover every output range. The model variants in the Lavatec D series and the LavaClassic D can be individually adapted to the output of your plant and to special cleaning tasks.

Lavatec D4/D5

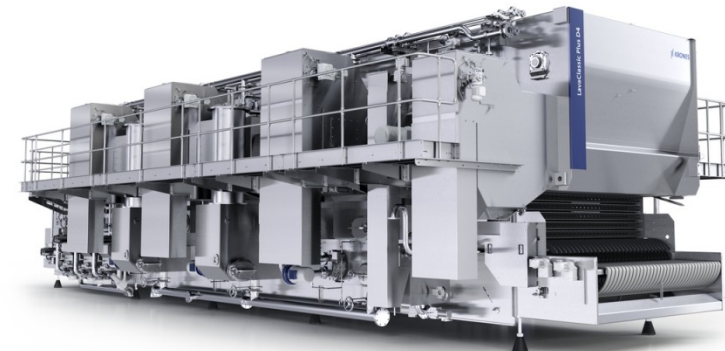
The frugal solution for water and energy management



- Processes 10,000 to 144,000 bottles per hour
- Powerful synchronous drive motor for gentle transport of the bottles
- Complete version built as a Clean Design

LavaClassic D4/D5

The cost-effective cleaning professional



- Processes 10,000 to 144,000 bottles per hour
- Cost-effective cleaning professional thanks to the omission of complex automation
- Tried-and-tested shaft drive
- Water zones in Clean Design



Layout of a double-end bottle washer

1. Infeed

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

2. Modular pretreatment

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

3. Modular caustic baths

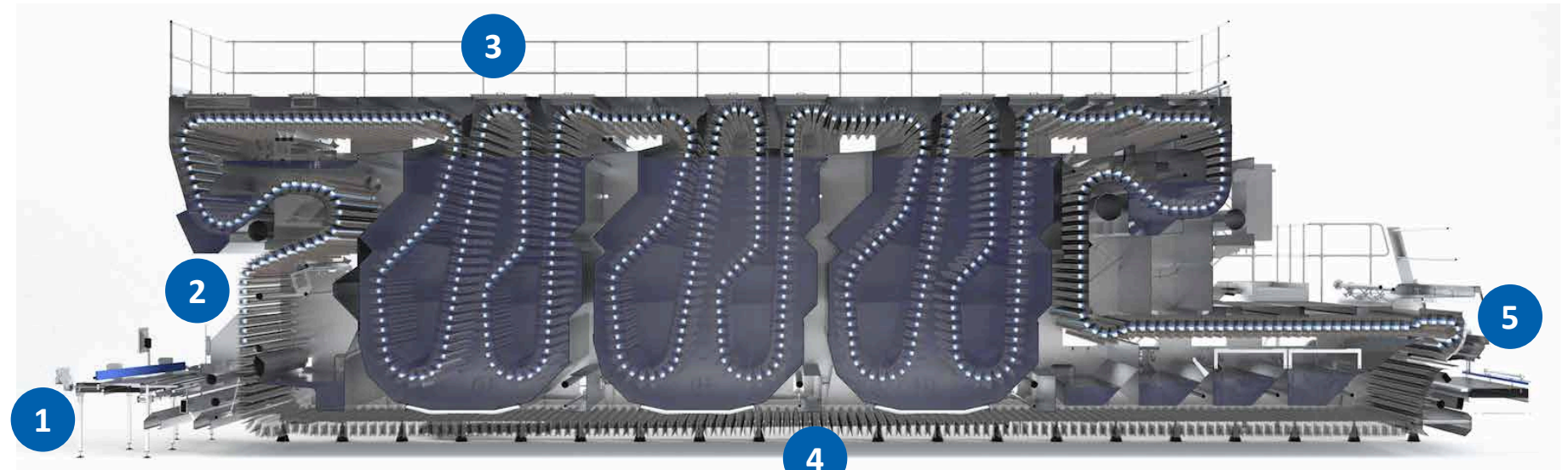
Single or double loops for the caustic baths with individual temperature stages and optimised mechanical cleaning through interior spray cleaning

4. Pipe bundle heat exchanger

Heat distribution via low-maintenance external pipe bundle heat exchanger

5. Post-treatment

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





Clean Design concept for the most stringent hygiene demands

To ensure that the bottle washer itself also sparkles with cleanliness, we use our revised Clean Design concept to ensure that even the most stringent quality and hygiene demands are met.

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



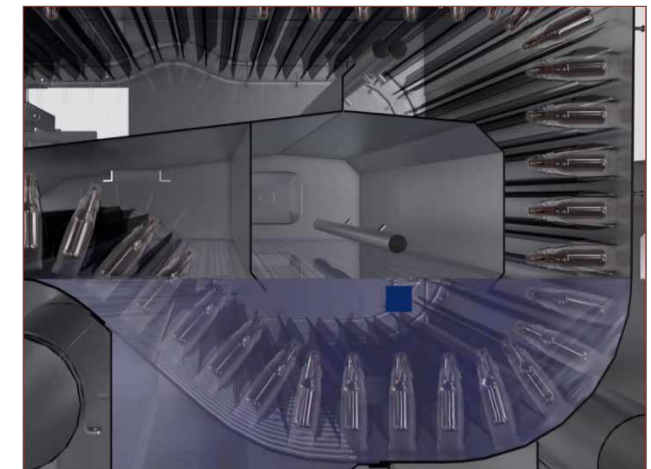
- Bottom troughs mounted with an incline
- No dead corners in the shape of the basin
- Short drying times
- Zones can be cleaned quickly

Self-cleaning pump sieves (only on Lavatec D4/D5)



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

Fine filtration (only on Lavatec D4/D5)



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



New walkway design

The revised walkway design impresses with:

- Extra-wide walkways in the maintenance areas for generous access and working areas
- No handrails on the inside – thus enabling unrestricted access to the wall of the machine and to the spray pipes
- Access to the roof of the machine via a staircase with handrail for safe and comfortable access to the working area



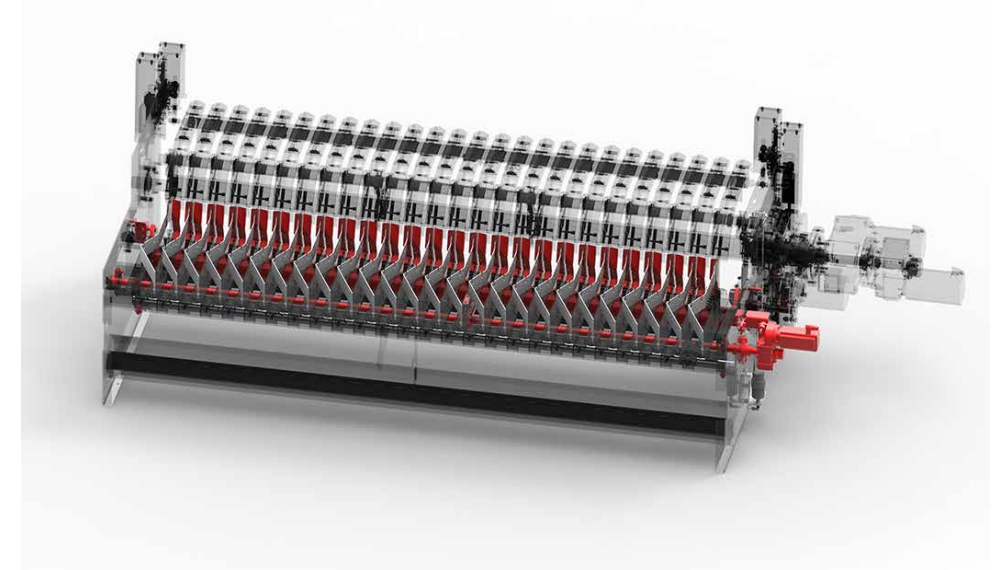
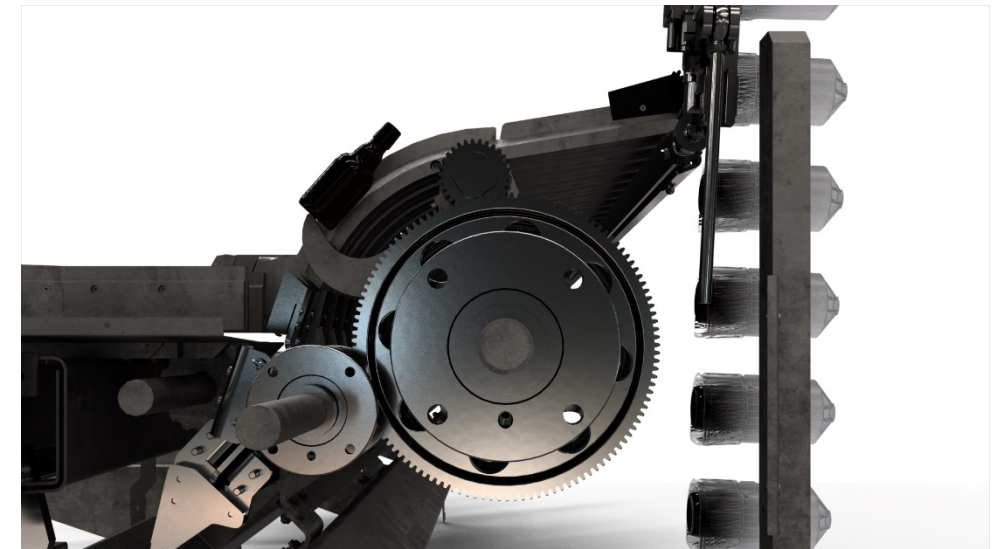


Development project: Servo infeed

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

Benefits

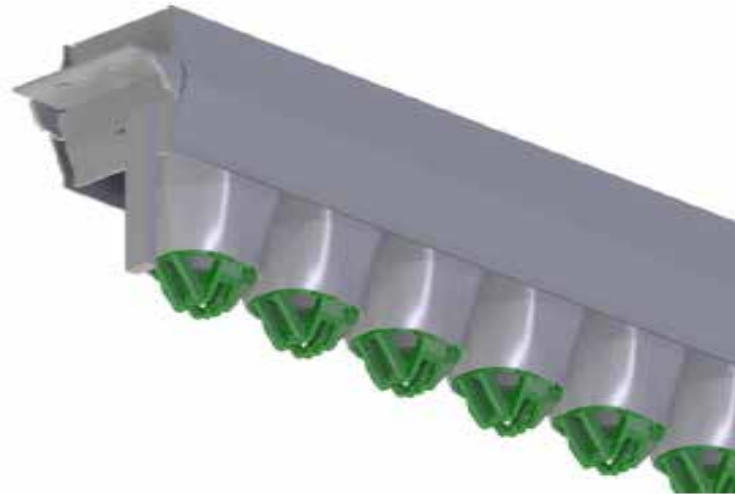
- Noise reduction: Empty bottle tilting in front of infeed
- Torque monitoring: Curve specifically designed to suit the bottle shape and weight
- User-friendliness: Easy fault reset through independent control of finger shaft and bottle transfer guides
- Gentle bottle handling: Reduced pressure on the bottles through controlled conveyors at the infeed





Available types of bottle carriers

Standard bottle carrier



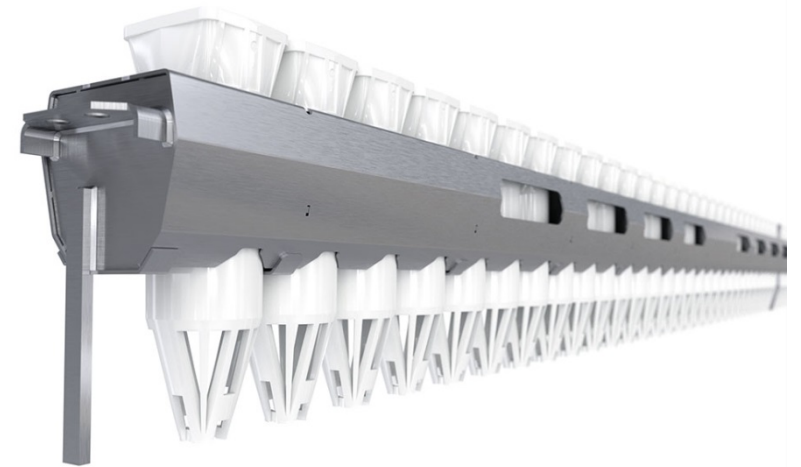
- Solid steel carrier with plastic insert

Grid bottle carrier



- Reduced-weight version of the standard carrier
- Lower drive loads

Lightweight bottle carrier



- Lightweight bottle carrier with plastic cells
- Lower drive loads



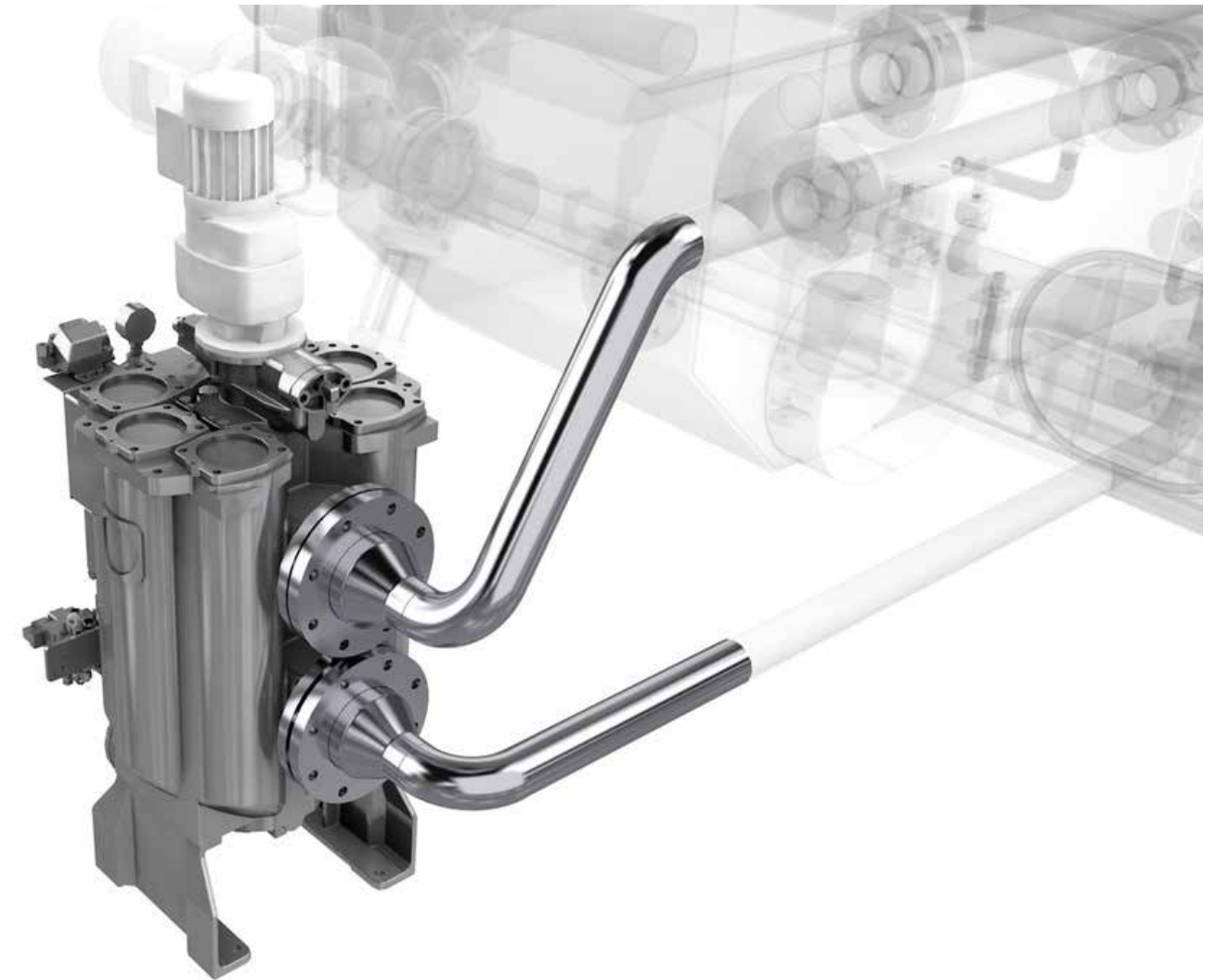
Filtration options

Caustic management

- Caustic filtration:
 - Longer caustic lifetime
 - Continuous filtration
 - Automatic backflushing

Microparticle management

- Post-caustic filtration:
 - Continuous filtration
 - Automatic backflushing
- Microfiltration of cold water:
 - Continuous filtration
 - Automatic backflushing
- Nanofiltration of cold water:
 - Additional continuous filtration





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 regenerative heat exchangers
- Optimised pre-heating of the bottles in a pre-heating module

For electrical energy savings

- Strategic energy management

Alternative heating concepts

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





Benefits to you

High microbiological level

The post-treatment section is designed in accordance with our Clean Design concept. The double-end design provides spatial separation between contaminated and clean bottle streams, thus meeting the highest hygiene demands.

Cost-effective and efficient

Thanks to the automated 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 frugal water and energy budget. And it proves that you do not always need lots of chemicals to achieve highest hygiene standards.

Compact technology even for low budgets

In terms of automation, the entire machine concept can be matched to your individual requirements. Depending on your needs, choose between a robust drive shaft system or frequency-controlled individual drives.

Operation made easy

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



Certified ecological efficiency: machines with enviro label



At KRONES, the blue 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 the TÜV SÜD (technical inspection authority) for assessing production plants. The enviro test procedure has also been certified by TÜV SÜD as an independent expert. Therefore, you can be sure that an enviro label stands for ecological efficiency.

How does the enviro label apply to the Lavatec series?

Energy efficiency

- Low consumption of thermal energy thanks to the use of insulation, regenerative heat exchangers and grid or lightweight bottle carriers
- Frugal water consumption thanks to optimised water routing, pressure regulation and fresh water cooling concepts

Environmental compatibility

- Minimised consumption of water and lubricants thanks to the use of high-quality plastics





Everything from a single source

Training sessions at the KRONES Academy – trained personnel increases your line efficiency

The versatile training offer ranges from operation, servicing and maintenance to management training. We will gladly also establish your individual training programme.

KRONES Lifecycle Service – partner for performance

Also after having purchased a new machine, KRONES will take care of your line; the LCS experts are always ready to consult you and translate your goals and wishes into optimal LCS solutions.

KIC KRONES cleaning agents make your machine shine

Only if the production environment is immaculate, can your product be brilliant. KIC KRONES provides you with the optimum cleaning agents and disinfectants for each individual production step.

Lubricants from KIC KRONES for every 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.



Digitalisation



Process
technology



Bottling and
packaging equipment



Intralogistics



Lifecycle
Service

We do more.

 **KRONES**