



Single-end bottle washers

Lavatec E series

 **KRONES**

Bottle washers for every situation



Whether for tight spaces or tricky cleaning tasks, as a multi-talented all-rounder or an inexpensive basic system: every Krones single-end bottle washer is an experienced specialist in its chosen field.

At a glance

- Modular component system with freely combinable treatment units for a machine that is perfectly tailored to the cleaning task
- Space-saving machine concept for smallest installation spaces
- Main drives with servo controller
- Economical consumption of resources through use of state-of-the-art technologies (improved CO₂ footprint)
- Highly efficient caustic flow for quick label detachment
- Different pre-treatment options – including special solutions such as sand and glass fragment removal
- Optimum accessibility thanks to user-friendly catwalk concept
- Microfiltration in the main caustic
- Process optimisation thanks to latest digital products



Individual machine concept for every output range



From small to large: The single-end bottle washers in the Lavatec E series cover every output range. Depending on the output requirement and loop routing, the E2, E3 or E4 designs provide the appropriate machine concept for individual applications. The washers are provided with interfaces for a higher-level automation system and use the latest safety standards.

Lavatec E2

The "small" bottle washer with the advantages of its larger siblings

- Up to 30,000 bottles per hour
- Low space requirements
- Clean Design version



Lavatec E3

The all-rounder for all output ranges

- Output ranges from 5,000 to 135,000 bottles per hour
- Classic caustic loop routing with label removal
- Clean Design version



Lavatec E4

The specialist for tricky tasks

- Medium output range of up to 70,000 bottles per hour
- Modern loop routing with four label removal points
- Clean Design version



Layout of a single-end bottle washer (E4)



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 loop routing

- 3 Optimised loop routing in the caustic section for longer treatment times

Tubular heat exchanger

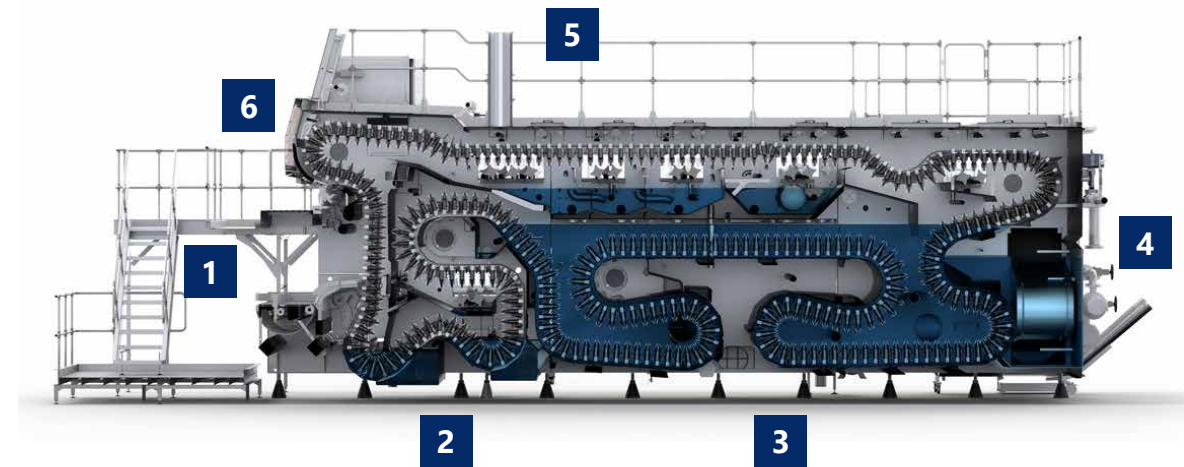
- 4 Heat distribution via low-maintenance external tubular heat exchanger

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



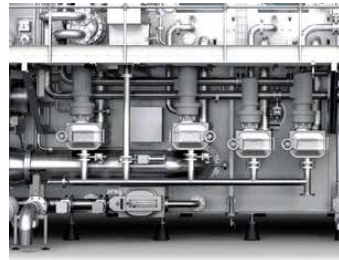
Clean Design concept for the most stringent hygiene demands



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.

Automated post-treatment section

- Self-cleaning filters
- Short cleaning time



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

- Easily accessible zones enable fast and intensive cleaning
- Bottom troughs mounted with an incline
- Pumps run until completely empty
- Short drying times



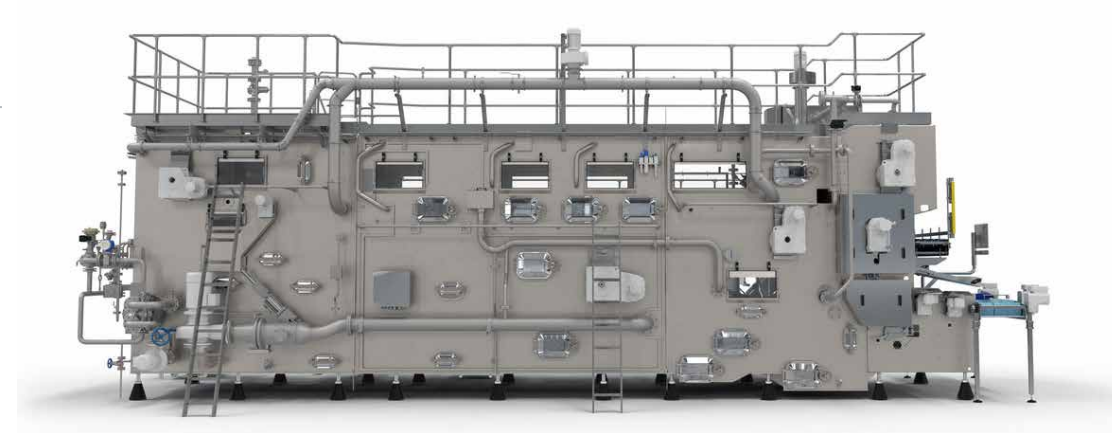
Highly intelligent servo control



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



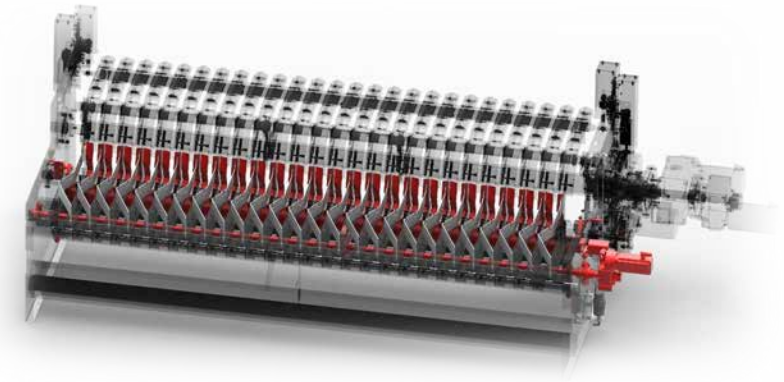
With our optional bottle infeed with servo drive technology, the infeed curve can be set individually for each container – and thus generate maximum flexibility.

Benefits to you

- Torque monitoring: Cam 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



Side view of the double shaft from infeed 2.0



Frequency-controlled infeed conveyor

Digitalization



Connected HMI – state-of-the art operator interface

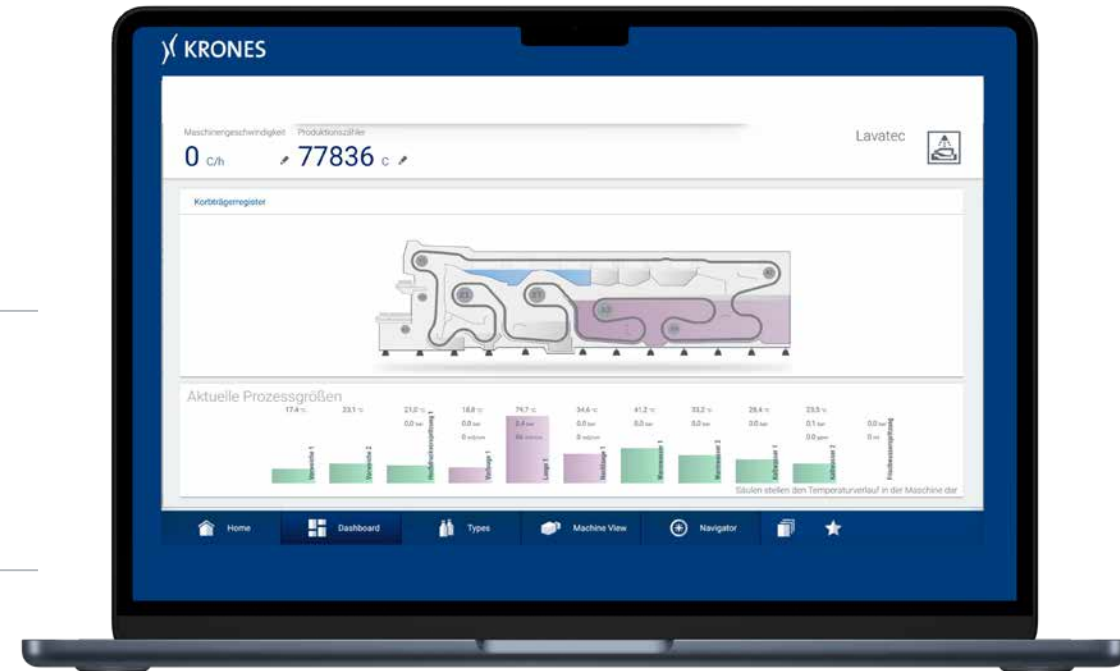
- Direct access to more information and data
- Individual design of the interface through widgets
- Multi touch-screen and click-and-response feature

TIA – future-oriented machine controller

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

Interfaces for digitalization products

- Shopfloor Guidance
- Line Control
- Share2Act and KOP
- Connected Line

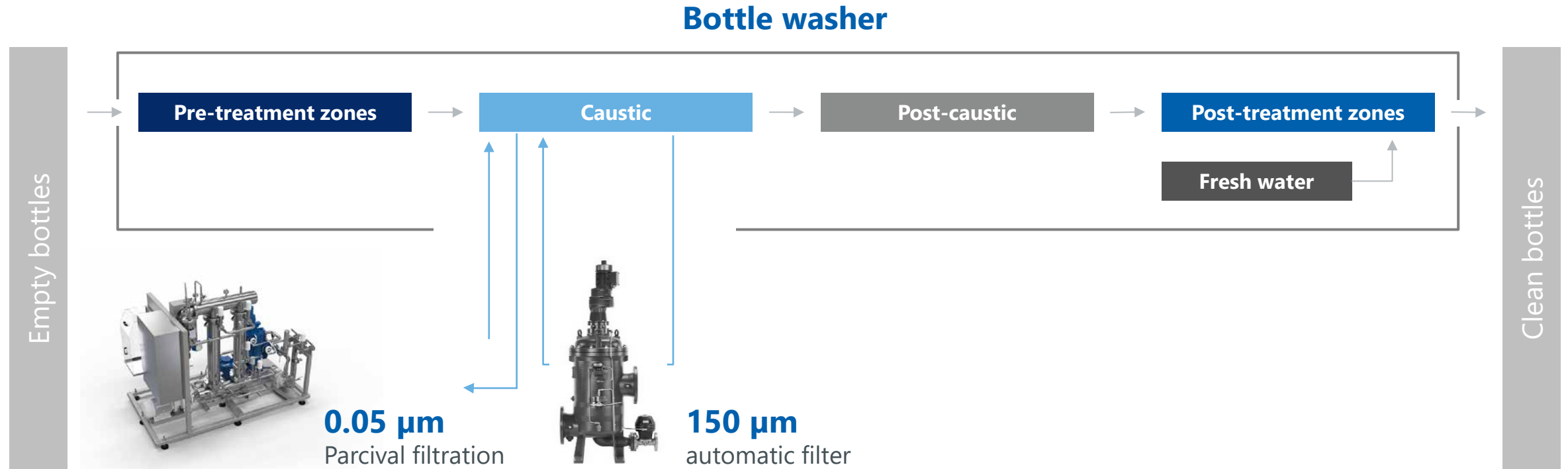


The new sectional view (E4) in Connected HMI

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.

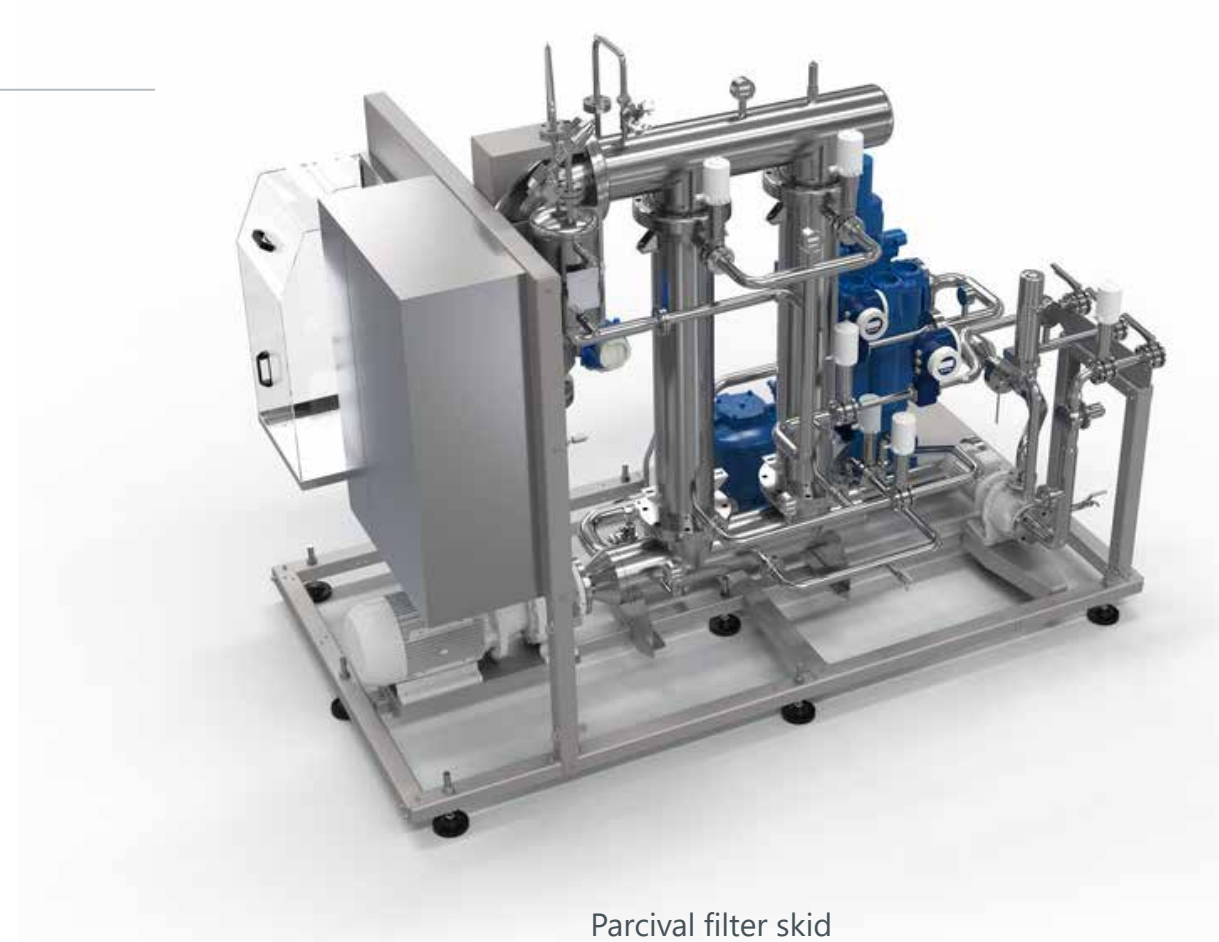


Parcival microfiltration system



Benefits to you

- Process integration in the main caustic system 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



Highest microbiological safety

The Lavatec series guarantees optimum hygiene in the machine thanks to its Clean Design water zones, self-cleaning pump sieves and innovative filtration concepts.

Compact machine with an individual design

The effective loop routing in the single-end machine concept and the modular layout of the machine sections combine to keep installation space requirements to a minimum. Thanks to the high-pressure pre-jetting, heat recovery and label removal, these systems can be perfectly tailored to individual cleaning requirements.

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.

Low cleaning requirements

With good accessibility, an open design and self-cleaning pump sieves for fully-automated removal of dirt, operating effort and cleaning requirements are both kept to a minimum.

Efficient in terms of operating costs

The intelligent water management, separation of hot and cold zones by design and the individually configured additional equipment save both energy and resources.

Requesting a new machine

You can easily send a request for a non-binding quotation in our Krones.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 exchangers 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 by the Krones Academy ranges from operation, servicing and maintenance courses through to management training. We will gladly also create your individual training programme.

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.

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.

KIC Krones lubricants for each production step

Whether gearboxes, chains or central lubrication: Our fats 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**

