

KRONES Lavatec D4/D5

The double-end bottle washer



Gives bottles a shining appearance

KRONES Lavatec D4/D5

“Less is often more” – the new and improved Lavatec series pays heed to this motto more consistently than ever. The KRONES bottle washer surprises with its thrifty water and energy budget. And it proves that „highest-quality hygiene“ can be achieved without a „chemical cudgel“. Lavatec’s economical treatment of resources is due to its clever construction as a double-end machine with vertical loops and continuous debris removal. This is explained precisely on the following pages.



Method of operation

In order to spatially separate contaminated and clean bottles from one another, Lavatec was designed according to the “double-end” principle: Bottle Infeed and discharge take place at different locations and thus assure the best possible hygienic conditions. The pre-cleaning system heats the bottles and removes glass fragments and coarse contamination. Subsequently the bottles run through various caustic baths in vertical loops, in order to completely wash away dirt or labels. Before the bottles leave the machine, they are cooled in the post-treatment zones with a small quantity of fresh water and freed of any remaining dirt or caustic residues.



Application

Food-grade cleaning of returnable glass containers.

Output range

	Output (bph)	Residual draining	Pre-treatment stages	Heat recovery	Caustic baths	Post-caustic submerge bath
D4	20,000 – 135,000	X	2 – 3	Optional	2 – 6	X
D5	30,000 – 135,000	X	2 – 3	Optional	2 – 6	X

Design features

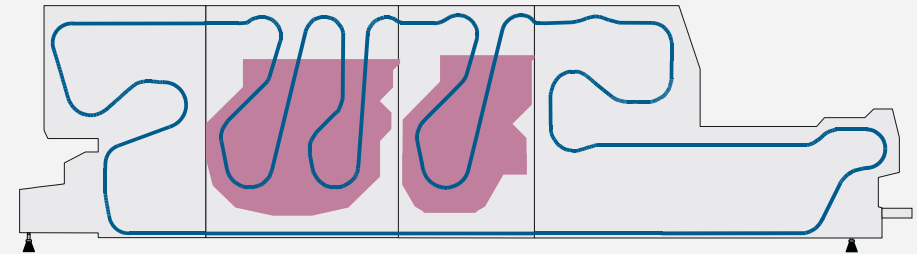
- Dimensions:
Width 2,450 – 6,300 mm,
Height 4,200 or 5,200 mm
- Spatial separation of infeed and discharge of the bottles
- Clean Design version
- Automatic bath filling system
- Bottle carriers of steel with plastic insert
- Heating system VarioTherm
- Conductimetry in the main caustic baths
- Weekly operation
- Discharge area in stainless steel
- Touch-screen operation
- Synchronous drives
- Coarse and fine particle filtration
- Automatic debris removal

Layout configurations

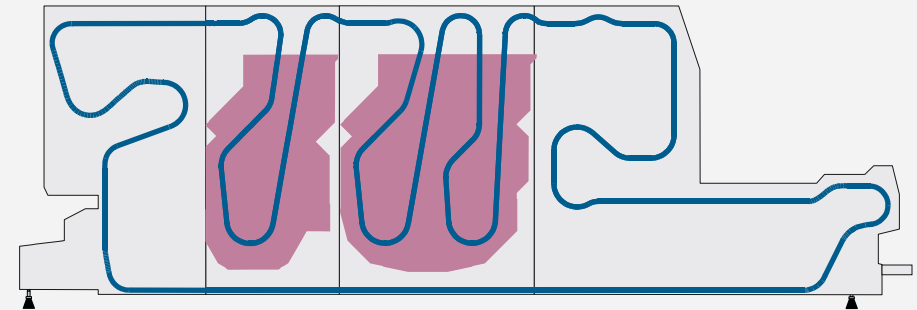
The KRONES cleaning technology is modularly structured: Single elements for pre-soak tank, the loop guide, and the post-treatment are combined to form an individual bottle washing system. Depending upon the requirements, additional components such as high-pressure pre-jetting, heat recovery and label removal can be included in the pre-soak tank.

For optimum space utilisation, Lavatec is available in different machine heights and widths.

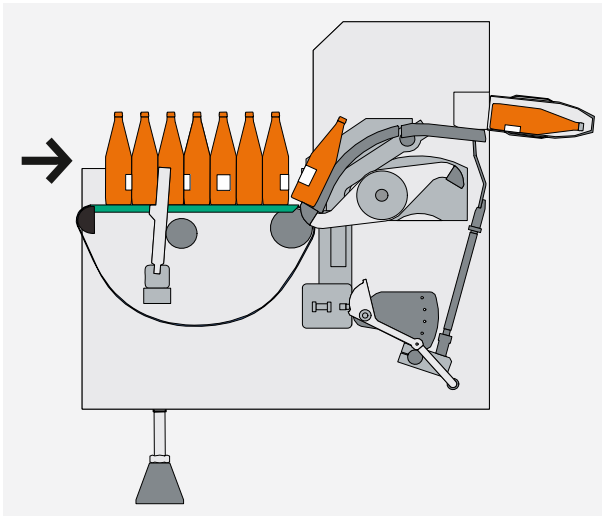
Lavatec D4



Lavatec D5



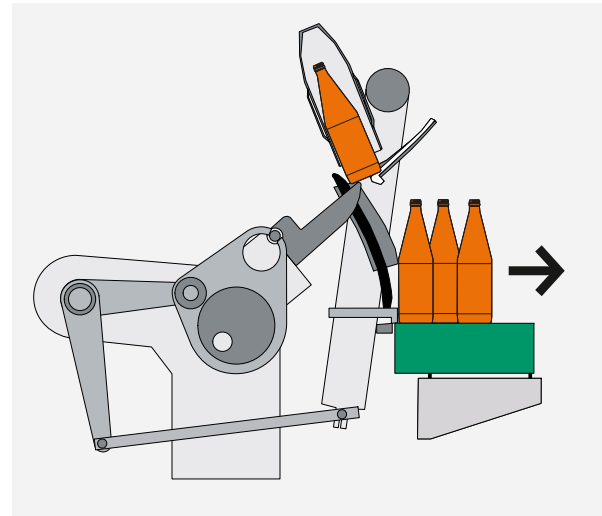
*Custom-made:
The model variants ideally adjust to
the space conditions.*



Bottle infeed

Infeed

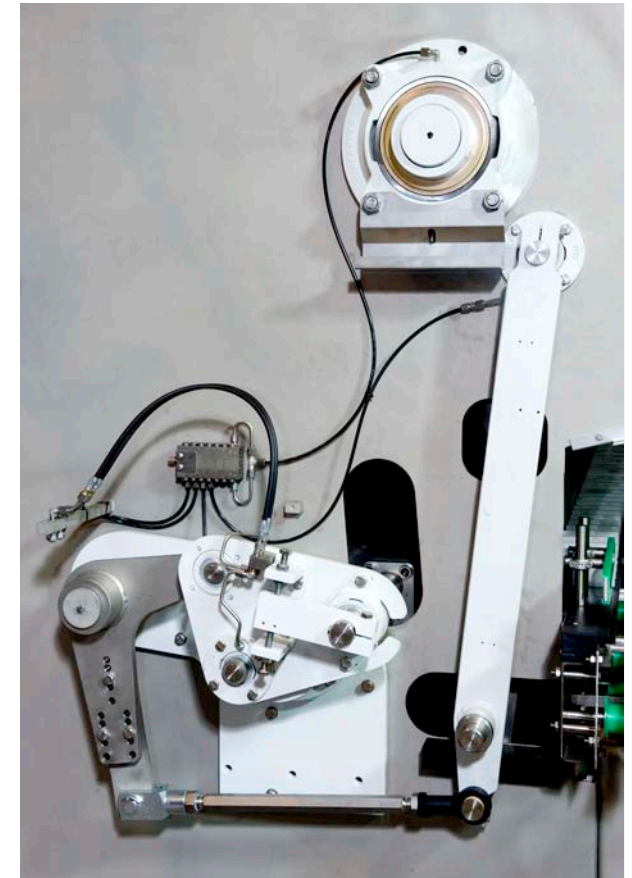
During the infeed, fingers take over the bottles from the conveyor and transport them safely and exactly to the bottle carriers.



Bottle discharge

Discharge

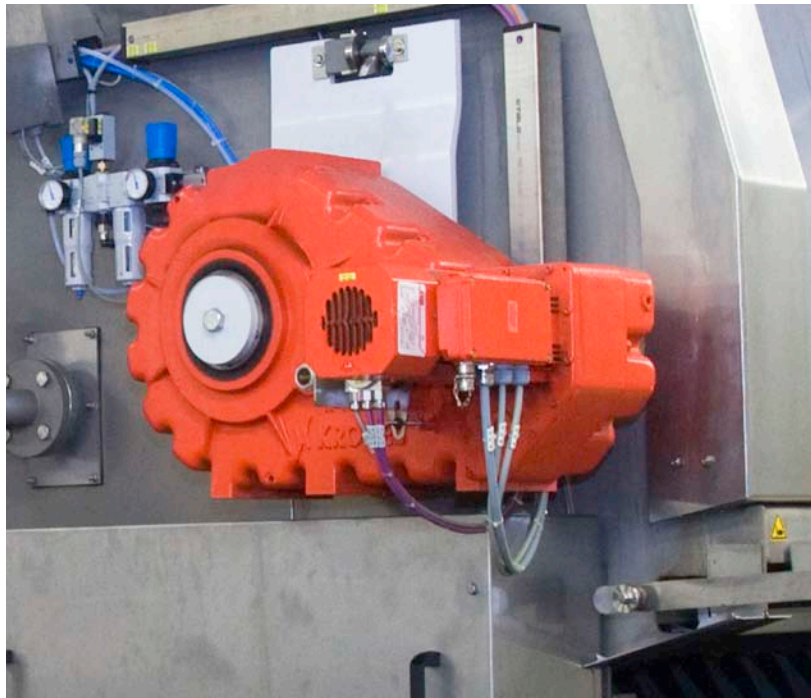
Special discharge fingers transport containers of all shapes and sizes without allowing them to fall and with little noise onto the conveyor.



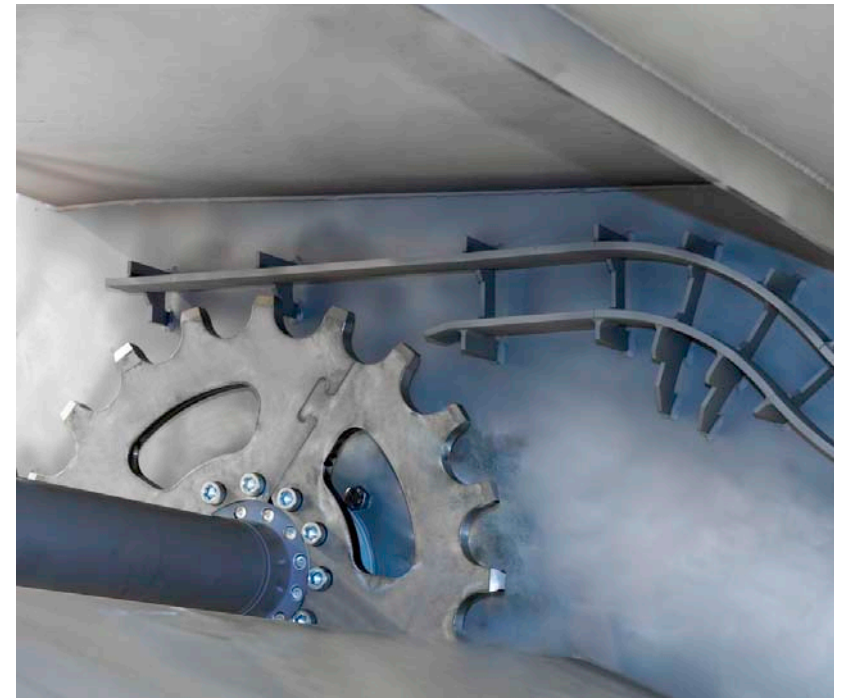
The mechanical components at the discharge

Drive technology

- Together with a central frequency inverter, the high-performance synchronous drives allow precise control of the main chain and gentle bottle conveyance.
- Bush conveyor chains with plastic bushes immensely reduce the frictional forces.
- All drive sprockets and end-turning devices are divided - this is a significant advantage for later maintenance jobs.



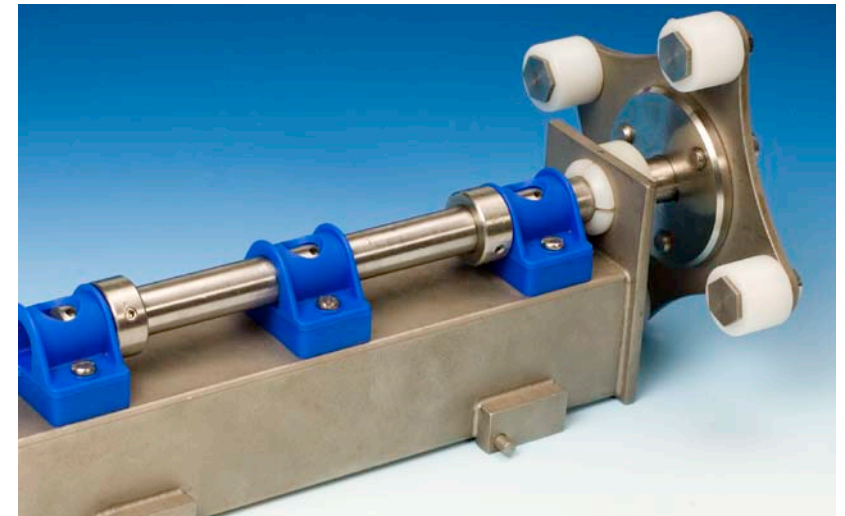
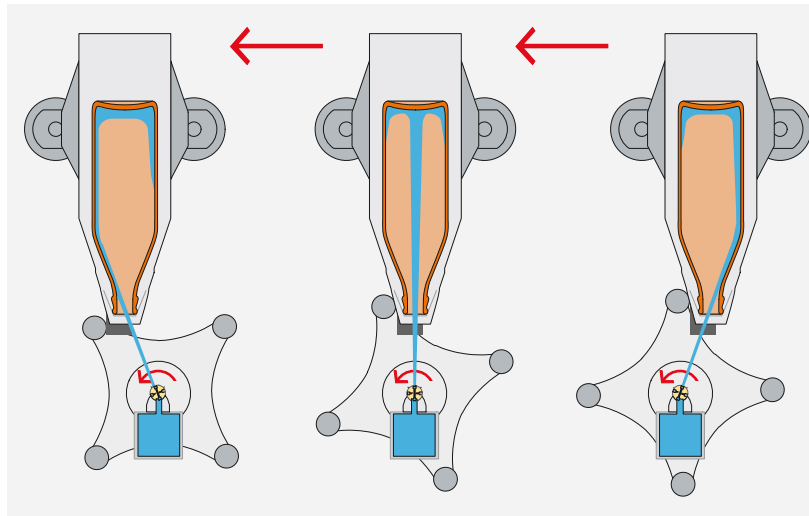
Synchronous drive



Split sprockets facilitate maintenance.

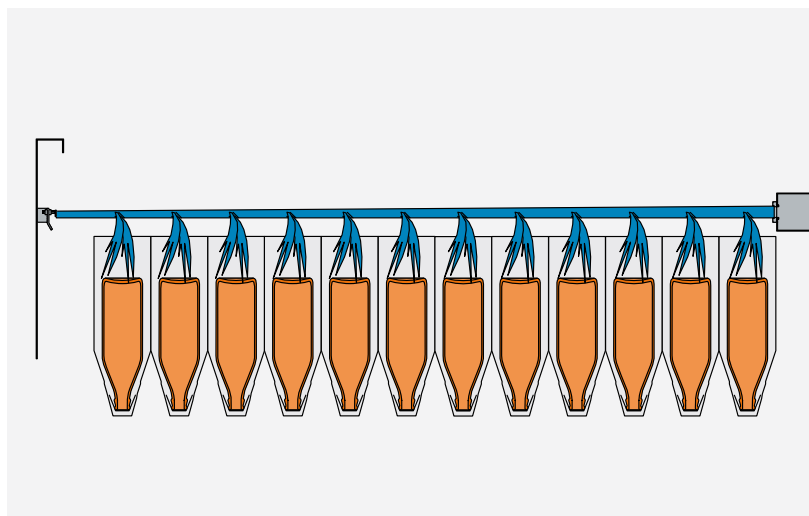
Interior cleaning

Rotating spraying nozzles clean the insides of the bottles from different angles of incidence.



Exterior cleaning

External cleaning is effected from above by patented jetting units.



Clean Design

- The housing and piping guide systems fulfil the highest hygienic demands and are equipped with central emptying points.
- The combined coarse and fine filtration renders the use of sieving conveyors and detachable sieves superfluous and ensures high post-caustic purity.
- The open bottle slide made of one-piece, germ-resistant plastic sections guarantees the best possible hygienic conditions.
- The easily accessible discharge area enables fast, intensive cleaning.



Combined coarse and fine filtration



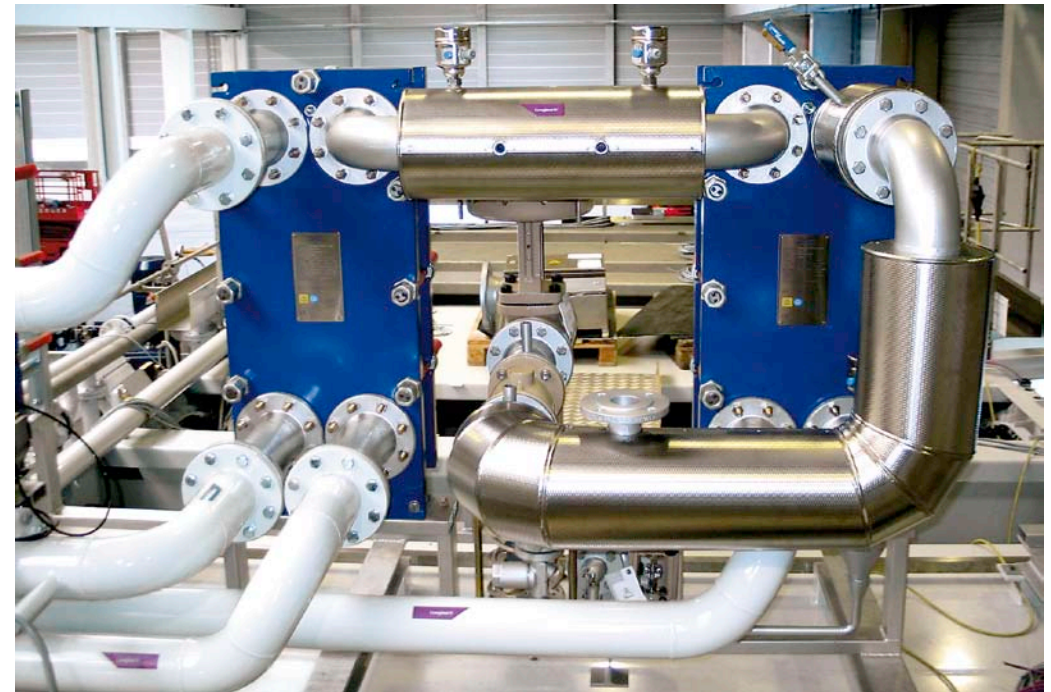
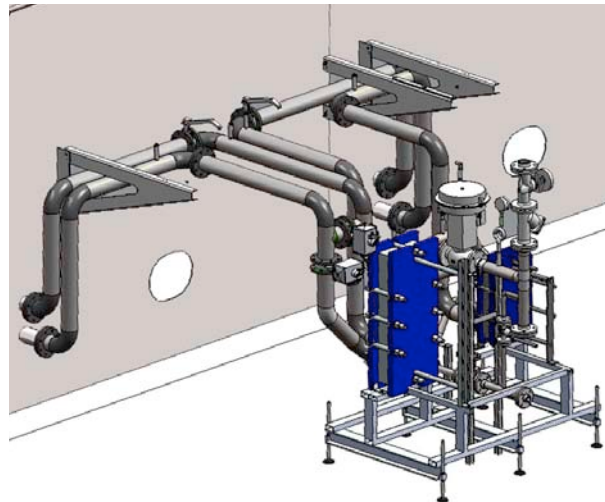
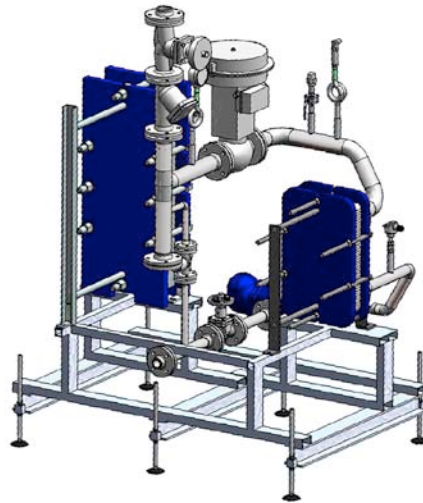
Open bottle chute made of plastic sections



Easy access to the bottle discharge

Heating system VarioTherm

- The plate heat exchanger VarioTherm has a K value of 5,000 – 10,000 W/m²K. The system also operates extremely efficiently with low supply pressure.
- The temperature of the condensate together with the condensate back-up control, guarantees high operating safety and optimum heat utilisation.
- The compact system can easily be expanded and retrofitted in existing machines.



Additional equipment

- High-pressure pre-jetting
- Modules for heat recovery
- Bottle infeed area in stainless steel
- Stainless steel parts at the bottle infeed and discharge
- Label removal in the main caustic baths
- PSL package for washing bottles with self-adhesive plastic labels
- Label press
- Module for rinsing and disinfecting
- Designed as rinsers for non-returnable bottles



PSL package, compressed-air filter



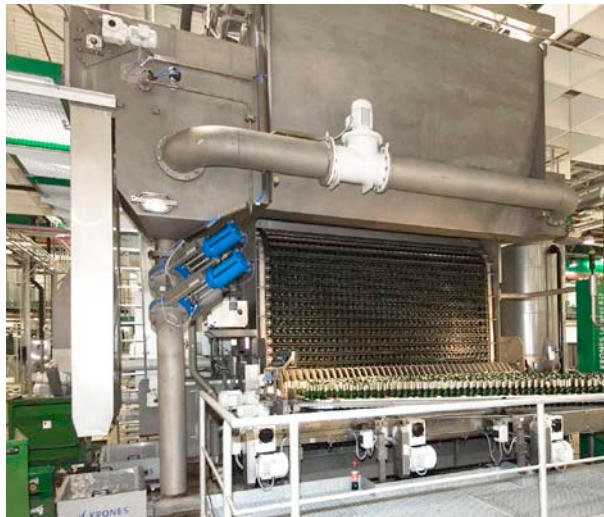
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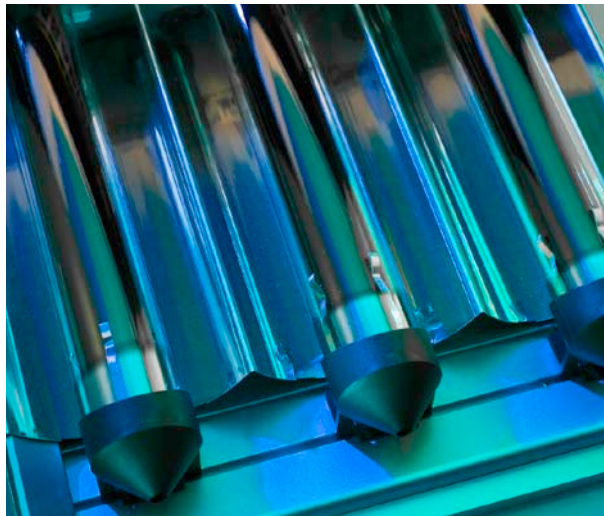
Infeed section of machine guard in stainless steel

Additional equipment

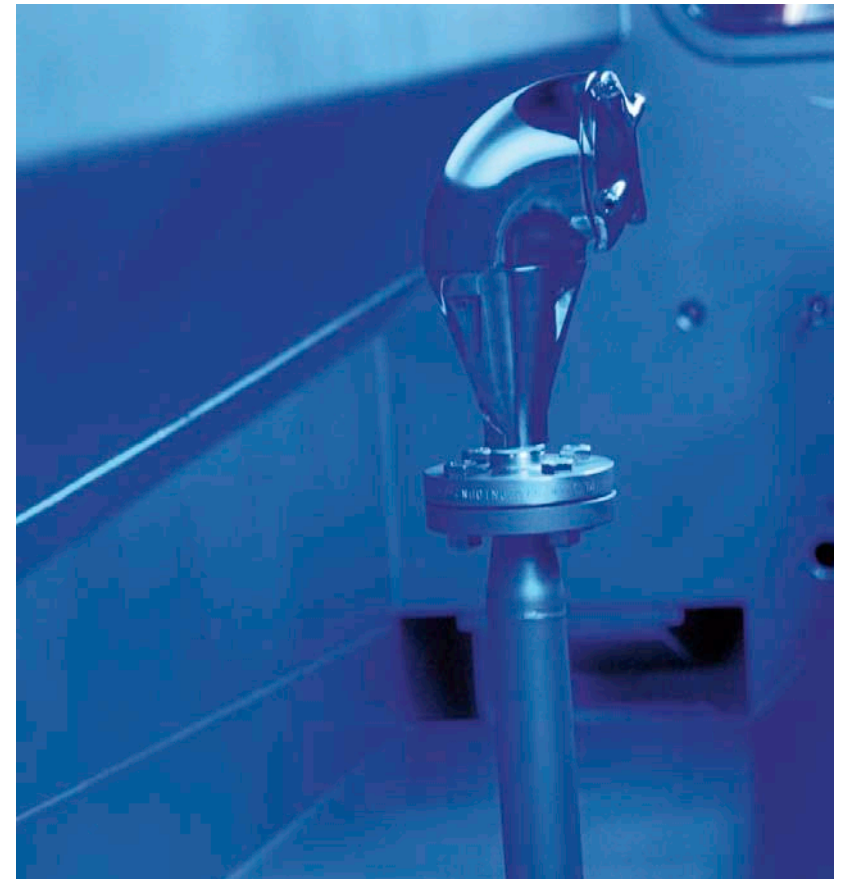
- Extraction system at the infeed and discharge units and in the caustic baths
- Debris removal in the pre-soak tank
- Conductivity controlled post-caustic tank
- Central lubrication
- Automatic chain adjustment
- Connection to water-recycling systems
- Connection to alternative heating systems



Automatic debris removal in the pre-soak tank



Connection to alternative heating systems possible, e.g. solar energy



Nozzle for interior machine cleaning

Your benefits

KRONES Lavatec D4/D5

- **Highest degree of hygiene**
Construction according to the double-end principle and clean design assures maximum hygiene and safety.
- **Efficient use of energy**
The heating system VarioTherm supplies the best results in heat transmission and reduces energy costs substantially.
- **Safe operation**
Thanks to its improved mechanics and continuous debris removal, Lavatec operates safely and reliably even in 24-hour operation cycles.
- **Gentle transport of the bottles**
Patented carrier systems guide the bottles gently and safely through the machine. The discharge is effected without containers falling and with little noise. Synchronous drives and chain rollers with plastic bushings guarantee the accurate transport of the bottles.
- **Less water and fewer chemical additives**
The continuous debris removal and the multiple-bath design with vertical loops result in enormous savings with respect to the consumption of water and chemicals.
- **Relief of the operating staff**
The inside of the machine is easily accessible and can be cleaned in an optimum manner.

