

# LOW-ENERGY BOTTLE WASHING MACHINE

## Description

Bottle washing machine with discharge of remains and pre-spraying, new generation (ng)  
for CB 4-0,5-R-4,8 BV ng

### MACHINE CONSTRUCTION:

- Machine body completely in stainless steel (1.4301 / AISI 304) including pipes, shafts, heat exchanger, screen baskets, electrical control cabinet, bottle infeed and discharge.
- Torsion-resistant welded steel frame in a modern steel special tube composite construction. By selective layering of plate thicknesses, the overall load bearing capacity and absorption is optimized in the machine housing. To counteract wear and tear, all high traffic areas are supported with 8mm (0,315") stainless steel plates.
- Height adjustable legs allow for level installation.
- Stainless steel caustic zones result in a reduction of heat radiation by about 50 %, because the thermal conductivity of stainless steel is about half compared to regular steel.
- All the hot zones of the machine are double-walled with 2" thick special insulation material, incl. bottom, ceiling, side walls and back wall. Therefore, the machine emits only a small amount of heat radiation, resulting in significant energy savings.
- Very space-saving, user-friendly, compact design.
- All operator controls are placed on the front of the machine.
- Large inspection windows on both upper sides of the machine, allow for safe and easy check and adjustment of the spray nozzles in all zones.
- Rear lid of the machine can be opened for clean out, manual rinse or caustic adjustments.
- Easy to clean spray tanks with sloping floors. To prevent heat transfer between the tanks, the spray tanks are separated and only connected through overflow pipes.
- Large double strainers inside the spray tanks, which prevents any particles from getting into the pumps and nozzles.
- Oversized main conveyor chains from a reputable manufacturer. Hardened 80mm (2.36") - track rollers, links of high-strength steel C 45, C 15 E-hardened bolts, bushings hardened 16Mn Cr5.

### STANDARD EQUIPMENT:

- Infeed table with vibrating poles for an automatic infeed on a bottle conveyor.
- Bottle discharge table over the entire width of the machine with diverter pulley.
- Optional fully automatic conductivity measurement and dosage setup (available at extra cost).
- Digital temperature display for Caustic I at the machine front.
- Central, robust gear drive for all movements of the bottle infeed and discharge as well as the main drive chain. This proven drive ensures trouble free operation.
- Effective label removal through a transverse filter band across the entire width of the machine driven by an SEW gear motor. Labels and dirt drain outside the machine into a bin.
- Integrated air blow-down following caustic and freshwater spray cycles and blowing off the labels from the filter band.
- On/off cycled freshwater spraying zone to optimize water consumption.
- Heat exchanger completely in stainless steel suitable for low pressure steam and hot water.
- High volume KSB standard pumps to ensure intense cleaning during caustic and water cycles. The pumps are driven by standard motors with low maintenance mechanical shaft seals. Casing material is stainless steel and cast iron. For pressure monitoring, stainless steel pressure gauges filled with glycerine are provided. (Optional pressure switch available at extra cost.)
- Virtually self-cleaning spray pipes made of stainless steel (AISI 304) with large diameter nozzles for cold-water, hot-water and caustic injection (3,2 mm and 4,5 mm / 0.13" and 0.18").
- Exact centering of the spray nozzles achieved by adjusting the spray nozzle manifold.

- The individual bottle pockets made of high strength plastic are used in extremely rigid, laser-cut steel sheet profiles and are easy to swap. They guarantee a gentle bottle transport through the machine.
- All necessary safety requirements are met by limit switches, as well as a reverse drive feature when jammed with broken glass. All functions of the infeed and discharge areas protected by limit switches.
- Noise reduction through the use of plastic in the infeed and discharge area, structural measures and selection of pumps.

## WORKING METHOD:

- Single-end machine based on the combined soak and high volume low-pressure spray principle. Bottle pockets mounted on an endless chain pass through the following zones: First pre-flushing, pre-spraying, residual liquid discharge, caustic soaking, hot caustic spraying with high volume and low pressure.
- Cool down area consisting of:  
Caustic-II spraying, warm-water-spraying and fresh-water spraying.
- Extensive drip zones result in low alkalinity in the water spray zones. The cascade principle where the flow of water inside the machine is opposite the transport direction of the bottles which results in an automatic regulation of temperature in all treatment zones.

## ELECTRICAL EQUIPMENT:

- Our principle is: We believe in forward looking decentralized control principles. In other words, all different areas in the machine are self-contained and have their own individual electrical components. The temperature control of the caustic soaking, the speed control of the machine and the general security components are each independent and separate systems. If a single system fails, it is easy to replace it with a new one even after years of use.
- All off-the-shelf switches and controls as well as drive protection switches and transformers are located in a water-proof electrical control cabinet at the front of the machine.
- The machine and control cabinet are factory pre-wired and ready for installation. To prevent condensation, the control cabinet is automatically ventilated during operation.