

## Saving time and money with Krones

**Aiming to keep line downtime due to breakdowns to a minimum, Krones says it has developed a stock-keeping package that enables clients' warehouses to be stocked with precisely the components required for the individual machines and lines involved. This customised stock also means that regular maintenance routines can be carried out – in other words, specific single components can be replaced on a precisely scheduled basis. Thus the stock-keeping package is more than just a safeguard against unplanned mechanical failures.**

The basis of the stock-keeping package is the Krones Spare Parts Availability Concept (SPAC). This internal concept has four main elements: a transparent stock proposal, proactive stock management, synchronised warehousing stages, and a globalised transportation concept.

The transparent stock proposal lists the wear, reserve and service components Krones recommends for keeping in stock. These are selected automatically on the basis of special algorithms that take into account parts already installed, together with their failure probabilities and characteristics.

Local conditions and needs are also covered based on a reference pool of machines which is updated every three months.

Krones uses this data not only for recommending what stock should be kept in the client's warehouse, but also for stocking and coordinating Krones' regional warehousing facilities on a proactive basis.

In the case of complete lines, parts that are the same in different machines are additionally identified and coordinated.

For delivering spare parts, Krones utilises a network of logistical service providers, who can deliver to any region in the world, irrespective of whether express or standard dispatch, fixed-time delivery or an on-board courier service is used. With this fourth element, the globalised transportation concept, adds a new building block to the stock-keeping strategy offered by Krones.

Krones' Hydronomic water treatment systems offer a broad range of kit suitable for selectively treating any kind of mains water.

The modularised Hydronomic water treatment system provides an option for producing consistently high-quality final water from nearly any quality of mains water, using an individually configurable range of building blocks for expansion at will. The following core components are available from Krones: media filtration (Hydronomic MF), ultra-filtration (Hydronomic UF) and reverse osmosis (Hydronomic RO), with a higher-order control system ensuring optimum operative efficacy.

As optional features for its Modulfill HES glass-bottle filler, Krones has developed an automatic probe adjustment function and a fully automated CIP cup mechanism. The new function was developed for probe-controlled fillers that are used to fill glass bottles with beer and carbonated soft drinks.

Level-controlled fillers with integrated measuring probes offer the advantage that the fill level in the bottle can be adjusted precisely. In the past, when changing over to another container height, every single measuring probe in every valve had to be manually re-adjusted for the new container height.

Krones has developed a process in which a linear motor is used to change over all the valves simultaneously at the touch of a button, which means enormous time savings for line operators.

Thanks to this innovative feature, the probes can now be moved to a comparatively high position. This has freed up space at the valve outlet for automatically fitting the CIP cups. During production mode, the CIP cups are 'parked', ready to go, behind the valves. For the cleaning-in-place mode, they are automatically fed in using a swivel mechanism and pressed against the valve. The CIP routine can now begin. Here, too, eliminating the need to manually insert the CIP cups at every single valve translates into significant time savings.

In addition to providing enhanced levels of hygiene and filling stability, the Modulfill HES ensures particularly gentle, foam-free filling and assures accurate fill quantities. The glass bottle is pre-evacuated twice using an interposed CO<sub>2</sub> flushing feature for minimised oxygen pick-up, creating a vacuum of less than 100 millibar. The filling function then starts. Two different speeds guarantee optimum flow behaviour. Diaphragm valve technology eliminates turbulence when switching over to a different speed. Swirl inserts in the valve ensure low-foam, low-turbulence filling.

When the inflowing liquid touches the probe attached to the filling tube, the valve closes. This measuring probe enables the fill quantity to be determined with maximised accuracy. Separate gas paths for pressurisation and sniffing help ensure high levels of hygiene and filling stability. All filling-valve functions are electro-pneumatically controlled, which means the electronic short-tube level-controlled Modulfill HES filler ensures optimum machine performance for every product-container combination – now improved still further by automating the measuring probe adjustment and CIP cup feed-in functions.