FILLING LINE VERSATILITY TO THE MAX TO MATCH NEW MARKET TRENDS

New market trends and the long shadow of possible new European legislation limiting use of artificial preservatives in food and drink are leading SIPA to develop of new systems in bottle filling lines that provide maximum flexibility at the same time as improved sanitation.
It is now possible for SIPA filling lines for carbonated soft drinks (CSD) to operate without the need for any form of artificial preservatives. With next-generation lines for liquid preparation and filling, it is also possible to fill CSDs at ambient temperature (18°C): energy savings can be appreciable.
Meanwhile, to provide bottling companies with improved flexibility, it is now possible for a single SIPA bottling line to be configured for a wide range of products, whether they be CSDs or hot-fill products, with or without pulp.

GOODBYE PRESERVATIVES

The idea of being able to do away with chemical preservatives for drinks is one that has always generated a lot of interest in the food and beverage industry, as well as among consumers.
On the one hand, there is the cost issue, and on the other there is the desire for more “natural” food products.
SIPA has been studying various aspects of its filling line equipment that will facilitate the elimination of such preservatives. On its Sincro systems, for example, various options are now available to maintain the cleanliness of PET preforms between the injection molding machine and the stretch-blow molding unit:

- the collection hopper, lift and slide can all be enclosed and subject to over-pressure to keep out dust;
- preforms can be treated with UV radiation or pulsed light to eliminate any possible contamination;
- preforms can be blown with ionized air and subject to ventilation to remove possible dust;
- special ventilation filters can be installed in the reheat oven area.

Various enhancements can also be made to ensure that the filling system is extremely clean and easily sanitized, with advanced cleaning systems for both the production circuit (Clean-In-Place, CIP) and the total filling

XTHERM flexible pasteurizer

environment (Clean-Out-of-Place, COP). Automatic dummy bottle loading, together with the use of microbiological isolator around the immediate filling area, produce a drastic reduction in the space that needs to be kept under control, making it possible to use sanitizing systems that are highly cost effective.
Isolator can also include the transfer module between the blower and the filler.
With a pressurization system with HEPA (High-Efficiency Particulate Arrestance) filters, a separation between the air in the "dry" zone (where the blow molding unit is located) and the "wet" zone (the filler) can be guaranteed. Furthermore, contamination of closures can be minimized with the use of a peroxide washing tunnel.

PRODUCT PASTEURIZATION

As for preparation of the filling product itself, SIPA has developed a flexible integrated pasteurization system made up of the following components:

- **Xblend** multicomponent de-aerating and mixing unit;
- **Xtherm** pasteurizer, available in two different versions, flat and tubular, for products with or without pulp or particles;
- Degasser with aroma recovery;
- **Carbo-SD** carbonation unit.

FLEXIBLE FILLING VALVES

SIPA's multi-product filling valve concept finds perfect form in the **Flextronic C** multi-product volumetric filling monobloc.
Flextronic C is suitable for filling CSDs, still and sparkling mineral waters, cold- and hot-fill juices. The configuration of the valve makes it suitable for processing products containing pulps and fibers. On top of all this, maintenance is very straightforward.
An ideal configuration for Flextronic fillers is **Xfill**. Here, the carbonating or mixing unit tank can be used as a buffer tank for the filler, which has no on-board product tank. A pump sends the product to a ring-shaped manifold in order to ensure that the product is fed into the filling valve correctly. This provides numerous advantages, including:

- reduction in product loss (less than 100 L during flavor change);
- the integration of the mixing and filling units produces a final product that is of higher quality and more stable, resulting in an improved filling process;
- reduction of product changeover downtime (ideally under 15 min with water rinsing);
- lower electrical power consumption, thanks to the light weight design;
- lower consumption of carbon dioxide (typically 10% less);
- lower product losses from snift circuit;
- improved performance at filler start-up.

Flextronic is also available in a version with a central tank equipped with a stirrer, for treating pulp-containing products.