FROM FLAKE TO FILL WITH XTREME RENEW SINCRO CUBE

SIPA has on many occasions demonstrated its considerable skills in combining the separate elements found in bottle production and filling lines into fully integrated blocks. Now there is a new chapter in the story.
It all began with the ECS single-stage injection-stretch-blow molding (ISBM) system, which first came onto the market way back in 1986. Later, SIPA took another important step forward with Sincro Bloc R, a compact integrated rotary system for high speed rotary blowing/filling/capping. Recently, following the introduction of XTREME, the revolutionary rotary platform for manufacturing high-performance, ultra-low-weight preforms using injection-compression molding, SIPA unveiled the XTREME Sincro Cube system, possibly the ultimate in process integration, combining preform production, bottle blowing, and filling and capping.

HOT WASHED FLAKES

PREFORM

EMPTY BOTTLE

FILLED AND CAPPED BOTTLE

Integration evolution continues

Possibly? Well, it may have been at the time, but now we have XTREME Renew Sincro Cube. This has to be the ultimate (at least for today) in terms of systems integration for PET packaging in the world of the Circular Economy. Because what it does is take XTREME Sincro Cube, which works with virgin PET, and add in more revolutionary technology to enable it to operate extremely energy-efficiently with post-consumer PET flake – in a system that, once again, is totally integrated.

XTREME Renew is the best technology currently available anywhere in the world for converting PET bottle waste into 100% rPET preforms. SIPA has already sold the XTREME Renew system, which it developed with Austrian recycling technology leader EREMA, to global beverage and spirit groups such as Suntory in Japan and Coca-Cola in Poland, as well as to the Amparo family in Brazil working in the detergent industry.

High-level energy savings in post-consumer PET recycling

Energy consumption is close to 30% less than a conventional PET preform production system, and involves CO_2 emissions almost 80% lower; compared with traditional systems producing rPET containers, the emissions reduction is around 18%. In addition to this, XTREME Renew has a lower requirement on warehouse space that can amount to as much as 20%. XTREME Renews starts with EREMA's Vacurema technology, which decontaminates and removes moisture from the flakes under vacuum. It creates a highly homogenous melt, even if input material has variable viscosity – something that is highly likely with post-consumer material.

Straight from flake to preform…

The Vacurema extruder is connected directly with an XTREME preform production unit, eliminating steps found in other recycling systems for granulation and reprocessing, improving energy efficiency, cutting costs, and increasing product esthetics and performance. Colour of the processed material is better, and levels of acetaldehyde are very low.

… and through to filled bottles

It almost goes without saying that XTREME Renew can be fully integrated with SIPA rotary bottle blowing, filling, and further downstream systems, but we'll say it anyway. The XTREME Sincro Cube system is a paragon of process integration, combining ultra-lightweight preform production, extremely energy-efficient bottle blowing, and filling and capping. It can be configured for all kinds of products: still and carbonated, cold-fill and hot-fill, with and without pulp, sensitive products (including CSDs without preservatives) and value products such as edible oil, milk and derivates, premium clear juices, home, and personal care products. The solution is compact – everything fits into a space of about 200 square meters – and cost-saving. And it produces a better result.

XTREME creates preforms that are up to 10% lighter than even the lightest preform produced by conventional injection molding. In the Sincro Cube, XTREME feeds an XTRA rotary stretch-blower designed to achieve top performance levels with the highest energy saving at the highest speed in the market. Finally, there is Flextronic, an innovative modular range of electronic, volumetric filling monoblocs. By choosing the most suitable filling valve, it is possible to create bespoke solutions for a wide range of bottling needs.

Multiple configuration options

Just like the original XTREME Sincro Cube, the new system with added recycling capability is available in numerous versions. The preform production wheel can hold 72 or 96 cavities, the blowing unit holds 16, 20, or 24 molds, and the number of vales on the filling station ranges from 60 to 100. Depending on the combination, maximum output is between 36,000 and 54,000 filled bottles per hour. All combinations are capable of producing filled bottles up to 3L in volume.