HOT-FILL OPTION FOR SINGLE-STAGE ISBM DEBUTS AT K2019

The biggest plastics show in the world will be the stage for not one, but two debuts from SIPA. The company stand will showcase the new hot-fill option for ECS SP single-stage injection-stretch-blow molding machines and also the latest PET preform injection molding system, the XFORM GEN4 (more details on this elsewhere).

ECS SP machines have a hybrid drive technology. Servo-electric drives are used where precision and speed are required, while hydraulics perform tasks where there is no particular need for high performance. This solution provides the best combination of high performance and low energy consumption.

VALVE-GATED HOT RUNNERS

The molds mounted on the ECS SP are equipped in a standard configuration with valve-gated hot runners for production of premium quality containers. An additional advantage of the molds solution provided by SIPA is that it gives users the opportunity to use, for any given number of cavities, the same hot runner system for different types of preforms, with only the cold half needing to be changed. This has obvious advantages in term of costs and significantly reduces the time required for format changes. At K2019, the hot-fill option will be fitted to an ECS SP80, the larger of the two models in the ECS SP family (the smaller ECS SP25 can also be equipped with the hot-fill option).
The ECS SP systems stand out for their compact dimensions, high energy-efficiency, for the best-in-class productivity (thanks to a combination of high cavitation and low cycle time), and the premium quality of the containers they produce.

PRODUCTION OF KETCHUP CONTAINERS

The ECS SP80 HF, which has an 80-tonne injection clamp force, can produce containers as small as 10 ml. At the K show, the containers being produced will be rather larger than that: 420-ml ketchup bottles with an oval shape that weigh just 28 g. Other bottle features include a height of 167.5 mm and a neck diameter of 38 mm with a SP400 neck finish.
These containers are resistant both to a filling temperature of 85°C (±2°C) and to vacuum forces that occur as they cool down. This second feature is very important, because it solves the long-standing problem of the label crinkling, that is, the partial or even complete peeling off of the label, owing to deformation of the container.
The ECS SP80 HF on the stand will have six cavities and will run with a cycle time of around 14 seconds, resulting in a productivity of 1540 bottles per hour.

44 YEARS OF EXPERIENCE IN HOT-FILL AT SIPA

The new hot-fill option for ECS SP machines stems from SIPA's extensive experience in technology for production of hot-fillable containers with both single-stage and two-stage technologies. This has enabled it to tackle the two major downsides of the solutions currently available on the market for low-output systems (producing from a few hundred to a few thousand parts/hour): on the one hand, there is the lower energy efficiency of two-stage technology; and on the other, there is the poor thermal resistance of hot-fill containers produced so far with single-stage machines.
The hot-fill option now provides ECS SP users with a lower-cost alternative to aseptic filling. In addition to that, if oxygen scavengers are used in the PET, it is possible to achieve a shelf life for the ketchup as long as 12 months without needing to adding preservatives to the product, therefore providing a healthier product in line with the latest trends of the market.

FOR NEW MACHINES AND RETROFITS

Hot-fill capability can be retrofitted to existing ECS SP machines as well as supplied on new ones. The retrofit kit includes dedicated stretching rods, air valves, air vessel and piping that are required for the air recirculation in the container during the hot-fill process, an electrical heating system for the blow molds that ensures the cleanliness of the blowing area (no oil is used), and the upgrade of the machine's control software in order to include the management of this option.
SIPA, whose experience in the single-stage technology now stretches back over more than 25 years, also offers ECS SP users the opportunity to leverage its wide expertise in developing optimized preforms that enables very high productivity and premium container quality.