

Moulding and filling PET bottles in a single step – KHS develops highly efficient filling technology

With its FormFill technology, KHS now combines two previously separate processes into one single process: the stretch blow moulding process of the preform and subsequent filling of the bottle. This technology enables fillers to mould PET or rPET containers on one machine and fill them simultaneously. The system therefore requires up to 40 per cent less space than conventional stretch blow-moulding filler blocks. As a result of the time saved on the form-fill wheel, parts of the capping process could also be integrated at this point. The machine thereby simultaneously also prevents product losses during container transport.



FormFill makes it possible to mould and fill PET or rPET containers on one single machine.
(Photo: ©Joerg Schwalfenberg)

Flexible formats for various contents

The system is designed for still water. The technology, however, is also suitable for liquid soap and detergents as well as for various hotfill applications. Container formats currently range from bottles with a volume of 0.5 to 1.5 litres. "For the market launch scheduled for this year, we are focusing on outputs of 12,000 to 24,000 bottles per hour," says Frank Haesendonckx, Head of Technology at KHS Copoplast in Hamburg. KHS then plans on offering this technology for medium and high output ranges as well. "We are actively pursuing a dialogue with our customers in order to ensure that their special requirements can also be met with FormFill."

Efficient and space saving

"All savings added up, FormFill consumes up to 60 percent less energy than a current stretch blow moulder/filler block," says Haesendonckx. As has been the case with the conventional processing of plastic containers, the machine first heats the PET preforms. But instead of compressed air, a controlled product volumetric flow shapes the blanks into containers. This process has several advantages: as the inner skin of the containers cools down faster than is the case with the conventional process as the container is filled directly, FormFill achieves greater rigidity of the containers with the same wall thickness, which results in material savings for the preforms.

The so-called "water hammer" effect ensures that mould features, such as logos, can be more easily embossed, which ultimately leads to a greater degree of visibility at the point of sale, even when dispensing with labels. With a conventional air-pressure blowing process, a blowing pressure of up to 40 bar would be necessary to achieve the same quality.



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Additional stability for lightweight bottles

Another advantage is that trapped gas is able to escape from the product after sealing, thus creating a slight overpressure in the container. Haesendonckx explains: "This additionally increases the degree of stability, which has a positive effect on lightweight bottles in particular." In addition, maintenance costs are also reduced as a result of fewer components and format parts.

Further information and contact

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