

Drumming up business

When 12,585 parts work as one system, you get an injection-stretch blow moulding machine produced by a Cypriot machinery manufacturer. **Dominique Huret** visited the company in Nicosia to find out more about its latest focus

It seems longer than three years ago that we congregated in an exhibition hall in Düsseldorf for the K 2019 show, but Cypriot firm Cypet Technologies used the opportunity to promote the progress of PET with the launch of stackable crates, 50-litre milk bottles and 120l HDPE and PET drums. As we approach the next edition of K this October, the focus for director and general manager Constantinos Sideris is the development of large – and I mean large – PET canisters, beer kegs and drums.

Created in 1968, M Sideris & Son was initially selling machinery and materials for plastics and packaging, but Cypet Technologies was spun off in 2013 to design, develop, test and commercialise five injection-stretch blow moulding (ISBM) machine models for the production of PET bottles, jars and containers. The company's ISBM machinery has been patented globally and won several EU innovation grants.

Speaking to *Plastics in Packaging*, Sideris explains that the company's latest innovations include water dispenser bottles with integrated handles, which he says need to stay strong against scratches, compression and vacuum. Therefore, a large number of tests and software simulations were required to optimise the bottles.

"For containers designed to accommodate heavy loads (upwards of 20kg), handles are key," he says. "We decided to opt for an integrated handle on the side of the neck for

better ergonomics, no unclipping risk and easier recyclability. Today, the whole system (equipment, mould and process parameters) is operational and the design is registered. We have also completed the development of a range of lightweight one-way water bottles for water dispensers from 10l to 5 gallons (19l). A typical 19l bottle weighs 340g, while a 10l is 175g. We have achieved very high bottle quality with the lowest weight in the industry."

Additionally, Cypet Technologies has established new types of PET bottle that are stackable, have an integrated handle and are designed to replace HDPE jerrycans. They started to enter the market early last year in some European countries and are lighter than the equivalent HDPE canisters at 290g for a 10l PET version instead of 470g in HDPE.

"In addition, for the AdBlue additive now mandatory for diesel cars, the bottle has a recess for a funnel to allow ease of pouring into the gas tank. Multi-national brands are using these jerrycans made from 100 per cent rPET," he says.

PET beer kegs of different sizes can also be blown on Cypet's machine, explains Sideris. "We have developed a patent-pending 20l beer keg design that is lightweight, economical and safe, thanks to a pressure relief valve on the neck of the keg, integrated top chime and here too, handles. This is currently in production in Australia and will also start production in Europe in 2022."

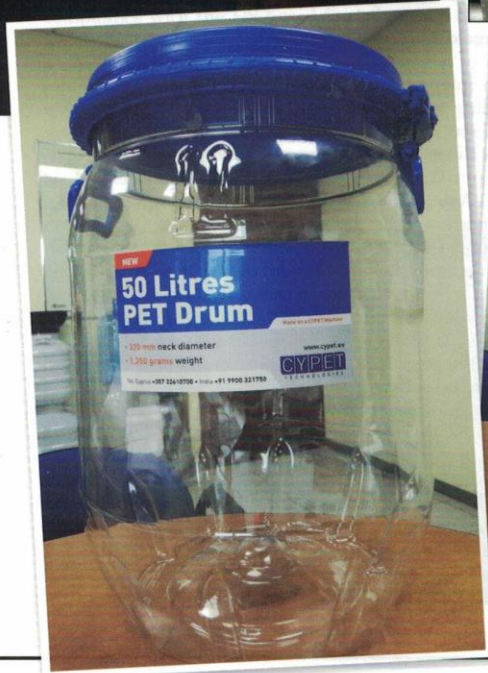


Cypet Technologies' director and general manager Constantinos Sideris has big plans for the company... literally

With ISBM such a crucial part of Cypet's business, what is the genesis of single-stage blow moulding equipment as far as the Cypriot firm is concerned?

"As former technical director of the Interplast/Harwal Group, I was aware of the high investment costs linked to conventional single-stage PET ISBM machines," he explains. "This is especially critical for countries with small markets. So, this gave me the idea to use the base of a normal injection moulding machine and convert it into a PET ISBM machine. The arrangement of the injection and blow cavities, as well as the clamping plates, was quite innovative and resulted in a patent issued for the system."

"The results are the same as in a normal ISBM machine, but at a lower investment cost. In addition, our machines allow great production flexibility, from 50ml to 50l, on



Top: A large number of tests and software simulations are required to optimise bottle development

Above: An army of PET beer kegs stand in line

Left: 50-litre drums and larger PET containers that offer ease of pouring are among the latest developments

the same machine, just by changing the moulds.”

Cypet has two machine series: toggle-based and long stroke. Each series has four machine sizes in order to cater for different bottle formats and outputs required by the customer. The machines make PET containers for a range of sectors including water, edible oil, pharmaceuticals, beer and industrial packaging.

“In 2021, we started rolling out our Generation 2 machines that offer greater speed, higher moulding precision, higher consistency and better reliability than the Generation 1 machines,” Sideris points out. “Thanks to servo-hydraulic technology and ▶

Plastics in Packaging

Plastics in Packaging is an ongoing source of information for the flexible and rigid packaging industries

FOLLOW US ON:



LinkedIn



[linkedin.com/company/plastics-in-packaging](https://www.linkedin.com/company/plastics-in-packaging)



twitter



twitter.com/plasticsinpkg

[plasticsinpackaging.com](https://www.plasticsinpackaging.com)



Constantinos Sideris points to an increasing number of customers requiring the capability to mould bigger bottles in rPET



a single clamping unit, the energy consumption is lower than conventional machines. Today, 28 Cypet systems are installed globally. Our Indian factory, set up two years ago, has just completed delivery of five machines. We can account for some 61 moulds, making bottles from 20ml to 120l."

At a time when international logistics is struggling with various constraints, Cypet is coping well, according to Sideris: "Our components come from Germany, Switzerland and Asia, where there were no shortages. Our equipment and mould delivery time has just been delayed for one additional month for deliveries from both our Cyprus plant and our facility in Gujarat, India. Our equipment fits in a 40ft container and the Port of Limassol is just 40km from here."

Looking ahead, Sideris forecasts steady growth in the market. Of course, the pandemic has shaken things up, he admits, but some segments have grown while others declined significantly.

"We are seeing more customers requiring the capability to mould

bottles in rPET, especially in the EU," he says. "We expect that, as Covid declines globally, economies will improve enough to allow recovery and growth in the plastics packaging market. Furthermore, with the increasing use of rPET in the production process, the plastics economy will transition to a more sustainable, circular economy with many benefits and further market growth."

As for Cypet, Sideris says he continues to be amazed by his customers' creativity. "Some call these jars, and some call them bottles. From miniature drinks to huge oil jars, or unique fermenters, there are a myriad of applications for these PET containers."

More information from Cypet Technologies, Lefkosias 45, Dali 2540, Nicosia, Cyprus. Tel: 357 22 610 700. Email: info@cypet.eu. Web: cypet.eu