Sumitomo (SHI) Demag unveils world’s largest sustainable packaging machine

Schwaig, October 16, 2019 - Sumitomo (SHI) Demag Plastics Machinery GmbH launches what is believed to be the largest and most energy efficient packaging machine in the current global market. Unveiled at K-2019, the El-Exis SP 1000 ton responds to market demands from injection moulders specialising in pail production and other large-scale packaging applications, including thin wall stack moulding.

Still the fastest injection moulding machine in the world, with a dry cycle time of 2.7 seconds, the El-Exis SP 1000-ton fully automated system is a real game-changer for manufacturers of larger packaging items. Designed specifically to produce large plastic containers used in food, pet nutrition, paint and chemical applications, the increased machine size means that the El-Exis SP, showcased for the first time at K-2019, easily accommodates the two-cavity pail mould designed by Techno Moules. To improve production efficiency, the mould tool features a new valve gate system developed by the Canadian mould maker. Designed to improve cavity balance during filling, the technology leads to lower clamp forces and as a result increases the lifetime of the mould.

Not only is the processing cycle time of the El-Exis SP faster than competing technology, with sustainability at the front of everyone’s mind, its hybrid design delivers a measurable energy efficiency advantage. This new generation of El-Exis SP consumes up to 20% less energy than the last generation of El-Exis SP machines. This is achieved by regulating the hydraulic pressure during the loading of the accumulator. The amount of energy saved is dependent upon the packaging application, moulding cycle time and process parameters.

Arnaud Nomblot, Director Business Development Packaging at Sumitomo (SHI) Demag explains: “Central to this machine’s fast cycle time and 1000mm/s injection speeds is the hydraulic accumulator. This enables moulders to repeatedly produce even thinner lightweight packaging items, resulting in significant reductions in raw material, packaging waste and shipping costs.”

Putting into context the significance of this application showcase, Nomblot adds: “This 1000 ton El-Exis SP is the only hybrid packaging machine of this size on the market today. It truly is in a category of its own for high-performance and energy efficiency.”

Reusable and recyclable
The live demonstration at K-2019 is also the company’s first showcase of a breakthrough recyclable polymer. In collaboration with Borealis, the 17 litre pails are manufactured using a high-quality recycled Polyolefin (rPO) compound comprising 50% post-consumer ‘yellow bag’ household waste (PCW).

Borealis’ investment in mechanical recyclers MTM Plastics and Ecoplast marks a significant leap forward in sustainable packaging, notes Nomblot. “With sufficient volumes of PCW now available, Borealis is applying its compounding know-how and leading the way in recyclable materials.”

Completing the sustainability cycle, the rigid consumer-friendly pails protect contents against contaminants, spillages or spoilage. What’s more, each pail can be used again and again as convenient storage containers, or cleaned, recycled and put back into the plastic materials stream.

Additionally, eye-catching IML labels supplied by Verstraete IML are made from polypropylene film and offer numerous branding and decorative options. The result - the entire pail package, label included, is fully recyclable.

**HolyGrail2.0 compatible**

The collaboration with In Mould Label (IML) partner Verstraete IML on the K-2019 installation proves that sustainable packaging can have visual shelf appeal. In a pioneering new development, Verstraete has created a unique, metallic and glossy label, which, like the pails, is HolyGrail2.0 compatible. “This means it can be repeatedly recycled without any loss to composition quality, which is a huge advancement for the packaging sustainability agenda,” comments Nomblot.

Feeding labels into the packaging machine is a Polymac/Pagès Group IML system. Equally innovative, the system is equipped with a side entry robot with two independent operating arms that perform parallel and sequential placement of the label into the mould while simultaneously removing each moulded component. “The independent operating robot arms ensures unrivalled flexibility and an optimum production set-up,” explains Nomblot.

Placement of the quick-change IML magazine is at an ergonomic height, creating a safe working environment that eliminates the requirement of stairs or platform. Refilling the label magazine can be performed without stopping production. At high speed and with exceptional accuracy, Polymac’s motor driven positioning plate ensures precise label placement within 0.1mm.

The Polymac system can accommodate both half and full wrap labels, adding to its flexibility and potential cost savings. In another unique feature, the K-2019 exhibit demonstrates the ability to switch between half and full wrap labels without halting production. Moulding of pail handles can also be
incorporated. Sumitomo (SHI) Demag has a ready-to-use El-Exis SP Multi to perform this very task, while Polymac can integrate a handle fitting solution.

**Quality control in the blink of an eye**
Alongside the pail exhibit, Sumitomo (SHI) Demag also displays a complete water cap production line. In collaboration with a variety of innovators, including materials supplier Borealis, respected beverage cap mould specialist z-moulds, mould dehumidification by Eisbär, and vision quality control company Intravis, the El-Exis SP 300 ton machine will showcase the mass-manufacturing possibilities producing 72 water caps (26/22mm) every 2 seconds.

Efficiently producing caps with a tamper-evident band, z-moulds applies its patented and highly precise z-slides® mould technology. Offering better output per capital compared to conventional lateral ejection processes, four sliders move in and out of the single slider frames to release the closure. Already adopted by a number of leading beverage cap makers globally, the z-slides® technology is proven to improve part performance and to reduce mould maintenance and subsequent machine downtime.

Also integral to this speedy turnkey exhibit is the inspection Capwatcher Q Line from Intravis. Comprising eight high-resolution cameras, this technology collects, visualises and provides up to 144,000 cavity-based measurements every minute. It also sources a unique inline temperature measurement for each closure, which allows moulders to determine the shrinkage behaviour of each and every closure.

The El-Exis SP range, available globally, now comprises 10 machines, with a clamp force range of between 150 and 1,000 tons.

**To view both packaging systems in operation, visit Hall 15, Booth D22, 16 to 23 October 2019.**

**Images/Captions**

**Image 1:** The El-Exis SP 300 ton demonstrates quality control of beverage caps with Intravis Capwatcher Q Line technology
Photo credit: Intravis

**Image 2:** At 1,000 tons, the new El-Exis SP is the world’s largest hybrid packaging machine, designed specifically for pail production

**Image 3:** Verstraete’s glossy metallic IML designed for the K-2019 pail exhibit is HolyGrail 2 compatible.
Notes to the editor

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Sumitomo (SHI) Demag Plastics Machinery GmbH
Sumitomo (SHI) Demag has shaped the development of the plastics industry from its very beginning. As a specialist for injection moulding machines for plastics processing, Sumitomo (SHI) Demag and its Japanese parent company are leading the industry.

The global development and production network of Sumitomo Heavy Industries and Sumitomo (SHI) Demag is comprised of four facilities in Japan, Germany and China with more than 3,000 employees. The product portfolio includes all-electric, hydraulic and hybrid injection moulding machines with clamping forces of between 180 and 15,000 kN. With more than 125,000 installed machines, Sumitomo (SHI) Demag is present in important global markets and ranks among the largest manufacturers of injection moulding machines in the world.

At Sumitomo's headquarters in Chiba, Japan, the company manufactures machines with clamping forces in the small to medium range. Nearly 95 % of all delivered machines are equipped with an all-electric drive concept. Sumitomo (SHI) Demag’s German facilities in Schwaig and Wiehe produce the Systec Servo range with hybrid drive as well as the El-Exis SP and Systec SP range of high-speed, high-performance machines. The all-electric IntElect range for international customers is also being produced in Germany.

As early as 1998, Sumitomo (SHI) Demag set up its first production site in Ningbo/China. In 2015, the Chinese subsidiary Demag Plastics Machinery (Ningbo) Co., Ltd. installed a new facility with a 13,000
m² floor space. It is earmarked for the production of the Systec C range with clamping forces of between 500 and 10,000 kN for the Asian market.

In addition to injection moulding machines, Sumitomo (SHI) Demag offers customised and standardised systems for the part handling automation, technical and process solutions for special applications, tailored services and service concepts as well as a range of financial options to support investment in injection moulding machines.

With its comprehensive sales and service network of subsidiaries and agencies, Sumitomo (SHI) Demag is present in all major markets.