Press release
17 October 2012

At the Fakuma 2012, Sumitomo (SHI) Demag is presenting high-quality complete solutions, across all series, with the highest levels of production efficiency

Safeguarding the future with production efficiency

Anyone who is looking for durability, availability, production performance and energy efficiency will find themselves irresistibly drawn to machines from Sumitomo (SHI) Demag Plastics Machinery GmbH based in Schwaig near Nuremberg. The Japanese-German manufacturer is delivering positive proof of this situation with its high-quality production solutions at the 22nd Fakuma, the international exhibition for the plastics processing industry, in Friedrichshafen. Once again, this year's exhibits demonstrate the pioneering role of Sumitomo (SHI) Demag in the area of production efficiency. From 16 - 20.10.2012 on stand 1105 in Hall B1, the company will be presenting the new, fully electric IntElect multi series, as well as the Systec hydraulic machine series, with an innovative IML-IMD combination as well as the hybrid, high-speed El-Exis SP machine with its new side entry.

Sumitomo (SHI) Demag Plastics Machinery GmbH will be grouping its current portfolio under the exhibition motto of "Ready for the future". Production efficiency occupies a central position. It takes absolutely top priority in machine development and is reflected in the comprehensive harmonisation of all components. In this way, the company achieves an optimum interplay of

energy, dynamics, output rates and quality in each new development. One clear example concerns the active modules that are adapted to all machine requirements, achieving specific efficiency gains as well as increasing the production efficiency for the user in a clear and sustainable way. Another example is the ground-breaking new NC5 plus controller which has set new standards with its operating convenience and extensive range of functions since its market launch one year ago. The NC5 plus is set to garner yet more plaudits this year with new functions, and will sustainably facilitate the practical use of all modules for the benefit of production efficiency.

IntElect: multi-component injection moulding combined with all the advantages of fully electric drives

The premiere of the new multi expansion stage for the fully electric IntElect series represents one of the exhibition's highlights from Sumitomo (SHI) Demag. The exhibited machine will be producing a 2-component fliptop with a 16-cavity mould that is closed by a function integrated in the mould. This means it can be immediately transported to the filling line without a follow-on step. The IntElect multi 350 (3,500 kN) used has an extended ejector travel, thus allowing working with turntables for example. Its motor drives can be conveniently integrated into the new NC5 plus controller. To allow the larger moulds that are typically used in multi-component processes to be employed without problems, the multi series is available with the corresponding wide platen versions in addition to the standard versions.

Many active modules are available for the IntElect multi, including the activeFlowBalance function which is of

particularly significant importance for multi-cavity moulds. The screw advance movement is actively stopped at the reversing point, meaning that the melt pressure is balanced out immediately in all cavities. This effect optimises the parts properties and reduces scrap to a minimum. The core pull units operate with activeDrive, which is a pump controlled electrohydraulically and by flow rate. The dynamic performance adaptation this involves in all phases of the injection moulding cycle ensures optimum efficiency and minimum losses – above all under part load and when operating without load.

The first size to be available will be the IntElect multi 350 with a wide platen spar width of 830 x 830 mm (760 x 710 mm in the standard). It will be followed next by the IntElect multi 220 (2,200 kN). With IntElect multi, Sumitomo (SHI) Demag Plastics Machinery GmbH is bringing multi-component injection moulding to a new level thanks to innovative and sustainable technology that offers scope for future expansion.

Systec: capacitively operated display with combined IMD/IML decor and function foil

The IMD and IML decoration techniques combine a completely new process that has been developed by PolyIC GmbH & Co KG and LEONHARD KURZ, both companies from Fürth, and is being demonstrated on a Systec 210-430 (2,100 kN). This high-end application reduces the task of producing displays with integrated controls or button surfaces to a single production step. In addition, it obviates the need to use glass which is both fragile and energy-intensive to produce. The key element of the display is transparent, conductive PolyTC® foils from PolyIC for capacitive control elements with the highest design freedom.

The complex production unit produces 3.5-inch display frames from PMMA only 2 mm thick. They have an IMD decoration foil on the front side while on the rear there is the multitouch-capable function foil which is integrated using the IML process. The IMD foil is positioned using a feed unit from Leonhard KURZ which is attached above the mould installation space, while the foil for the PolyTC® technology is provided by a 6-axis robot. It is secured in the mould with a tight tolerance of ±0.2 mm so that the functions of the display are fully guaranteed. An elaborate finishing technique from KIST Maschinenbau GmbH, Dresden, as well as a laminar-flow module from Max Petek Reinraumtechnik, Radolfzell, round off a production cell that operates with an air purity of clean room category ISO 7. A special aspect concerns the temperature control of the mould using teco vario technology from gwk Gesellschaft Wärme Kältetechnik mbH, Kierspe. The variothermic mould temperature control ensures cycle-dependent heating and cooling of mould areas, thus ensuring a better surface impression as well as reducing stresses in the moulded part.

All the equipment and machines exhibited are monitored and controlled centrally by the new NC5 plus controller.

Together with its partners, Sumitomo (SHI) Demag is successfully expanding its pioneering role in the area of decoration further this year with a new innovation that is ready for series production.

El-Exis SP: fast-running machine setting standards in IML with new high-speed side entry

On the stand of its partner of long standing, Sepro Robotique, La Roche-sur-Yon/France, a high-speed El-Exis SP 250-1600 machine with a double mould from Collomb Mecanique, Oyonnax/France, is producing 1 litre buckets with IML labels in less than 4.5 seconds. The highlight of this application in Hall A1, stand 1203, is the Speed Entry 350 MP attached to the side, which has been developed jointly by Sepro Robotique and the specialist for IML automation, Machines Pagès, Foncine Le Haut/France.

The side-entry device can be used with machines with up to 5,000 kN closing force, and achieves travel distances up to 2200 mm. The Visual 3 controller from Sepro communicates with the NC5 plus controller of the injection moulding machine in real time during production. As a result, the optimum procedure is guaranteed at all times, and unproductive times are reduced to an absolute minimum. The hybrid drive concept with energy recovery in parallel operation means the machine consumes up to 40% less energy than hydraulic high-speed machines. A key feature of the El-Exis SP additionally concerns the optimisation of mould movement. Especially in high-speed production, closing the mould can account for as much as 60% of the cycle time. Simply by this optimisation, this dominant effect can be reduced by up to 10% in favour of a noticeable productivity gain. With this exhibit too, Sumitomo (SHI) Demag is once again demonstrating that Schwaig can deliver a continuous stream of forward-looking ideas which can be developed and sold worldwide with expert partners for specific industry requirements.

Precision injection moulding for medical technology

A fully automatic production cell for manufacturing medical vials demonstrates the effect of the innovative active technology modules on precision injection moulding for medical technology. The core of the machine is an IntElect 50-45 (500 kN) that produces four transparent vials from cyclo-olefin copolymer (COC) in an 11 second cycle. Both the machine and the connected automation equipment (a 6-axis robot) are controlled by the new NC5 plus and is equipped with the corresponding interfaces. In this application, the production efficiency is controlled in particular by the activeLock, activeDynamics and activeFlowBalance modules. activeLock, as a switchable backflow inhibitor, makes it possible to keep even the smallest shot weight fluctuations within extremely tight tolerance limits thereby benefiting production. At the same time, activeFlowBalance efficiently supports the multi-cavity injection moulding process by balancing out the melt pressures in the cavities. The result is further improved parts properties while minimising scrap. activeDynamics sets new standards in the IntElect as a high-precision injection control function.

Production efficiency highlights on partners' stands as well

The impressive machine presentation of the IntElect this year is continued on two partners' stands. An IntElect 100-340 will be producing a PMMA lens on the stand of gwk Gesellschaft Wärme Kältetechnik mbH, Kierspe, in Hall B1, stand 1205. This is a thick-walled lens for focussing LED light. The injection moulding machine is equipped with a 2-cavity mould and requires a cycle time of about 70 seconds to produce the highly demanding component. Thanks to an innovative mould concept, it is possible for the first time to draw a direct

comparison between two process variants during a live presentation. While one cavity is cooled in the traditional way, the second cavity will work with the teco vario variothermic cooling system from gwk, which is based on CO2 cooling and heating. teco vario actively increases the mould wall temperature during the filling phase for a better surface impression and reduced stresses in the moulded part. The subsequent intensive cooling phase keeps the associated cycle time extension within economically justifiable limits.

On the stand of CeraCon GmbH, Weikersheim, an IntElect 100-340 will be producing a waterproof picture frame in two steps. In Hall A1, stand 1421-2, it will be producing picture frames from polypropylene, which subsequently have a PUR seal applied to them outside the mould. The 1K-PUR process used means that potential defects such as due to mixing errors or hardening can be avoided. The cycle time for production is about 60 seconds.

NC 5 plus with additional features

The NC5 plus controller introduced at last year's Fakuma is installed on all newly delivered machines as standard. It assists the processing company by providing a very broad bandwidth of functions. With its special operator menus configured for convenient and intuitive operation, the NC5 plus highly effectively supports implementation of optimum production efficiency in practical applications. This unique controller has been supplemented by a few new applications and options, facilitating increased production efficiency on an even more sustainable basis with simple, innovative operation.

Customer service: with a new organisation

Since Reinhold Ganzer Dipl.-Ing. (FH) took over management of worldwide customer service in November 2011, the structure of the after sales service, which is so important for customers, has been experiencing clearly apparent improvements in terms of efficiency, flexibility and the range of services offered. As a result, a separate area of the show stand will be devoted to focussing on the specific changes and the new advantages for customers.

Customer service of Sumitomo (SHI) Demag offers, amongst other services, a range of possibilities for optimising existing machines. One example of this is the retrofit with flow rate controllers for up to 12 cooling circuits for when the injection moulding machine needs to be upgraded to accomplish new applications. The energy efficiency of hydraulic injection moulding machine can also be increased by retrofitting them with a variable-speed pump drive. This means efficiency levels and energy savings of up to 40 per cent can be achieved.

Sumitomo (SHI) Demag Plastics Machinery GmbH

Sumitomo (SHI) Demag is continuing to be highly influential in shaping plastics processing. Being a specialist for injection moulding machines for polymer processing, Sumitomo (SHI) Demag and its Japanese parent company are among the leading companies in this sector globally. The Japanese-German company was formed in the spring of 2008 by merging the injection moulding activities of Sumitomo Heavy Industries (SHI) and those of Demag Plastics Group.

The global development and production network of Sumitomo Heavy Industries and Sumitomo (SHI)

Demag consists of four plants in Japan, Germany and China with more than 3,000 employees. The product portfolio encompasses all-electric, hydraulic and hybrid injection moulding machines with clamping forces of between 180 and 20,000 kN. With over 100,000 machines installed, Sumitomo (SHI) Demag is present in all important markets throughout the world.

With more than 5,000 machines sold each year, the Plastics Machinery Business of Sumitomo Heavy Industries counts as one of the largest Global manufacturer of injection moulding machines.

The main Sumitomo plant in Chiba produces machines with low and medium clamping forces. Around 95 % of all machines supplied by Japan have an all-electric drive.

The main Demag facility in Schwaig/Germany focuses on the hydraulic Systec and the hybrid high performance, high-speed El-Exis machines. Recognising the increasing importance of electric drive technology for injection moulding machines, Sumitomo (SHI) Demag has expanded the former Demag factory in Wiehe/Germany into an international centre of competence for electric machines. Thanks to the new production capacities, Wiehe now supplies all electric injection moulding machines worldwide with its IntElect series with clamping forces up to 4,500 kN and also the hydraulic Systec series with clamping forces of up to 1,200 kN.

Sumitomo (SHI) Demag continues to operate the former Demag plant in Ningbo/China which has been active since 1998. Since 2007 the subsidiary located

there, Demag Plastics Machinery (Ningbo) Co., Ltd, had its own, newly built plant and after reaching full capacity, moved to a larger factory with a production area of 11,000 sqm. Injection moulding machines from the Systec C product line with clamping forces of between 500 and 10,000 kN are produced here for Asian markets.

In addition to injection moulding machines, Sumitomo (SHI) Demag offers customised and standardised systems for the automated handling of moulded parts, technical solutions for special applications in process engineering, tailor-made service concepts and various forms of financing for investments in injection moulding machines.

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

www.sumitomo-shi-demag.eu

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Contact

Stefanie Lauterbach, Marketing
Sumitomo (SHI) Demag Plastics Machinery GmbH
Phone +49 911 5061-2915
Fax +49 911 5061-750
Email: Stefanie.Lauterbach@dpg.com

<IntElect_50_45>

The full electric IntElect 50 will be at Fakuma 2012. Installed in a fully automatic unit with clean-room equipment, it will provide an impressive demonstration of producing high-precision vials for medical technology.
Photo: Sumitomo (SHI) Demag

<El-Exis_SP_450>

Combined with a newly developed high-speed entry from Sepro, the El-Exis SP 250 (photo shows a model with 4,500 kN closing force) demonstrates its high-speed abilities in the manufacture of IML-decorated buckets in the shortest possible time and the highest possible quality.
Photo: Sumitomo (SHI) Demag

<Systec210_IMD_IML>

The Systec 210 multifunction machine will feature a highlight at Fakuma 2012: a compact production unit combines IML for the function foil and IMD for the surface decoration, to produce a 3.5-inch display control panel.
Photo: Sumitomo (SHI) Demag

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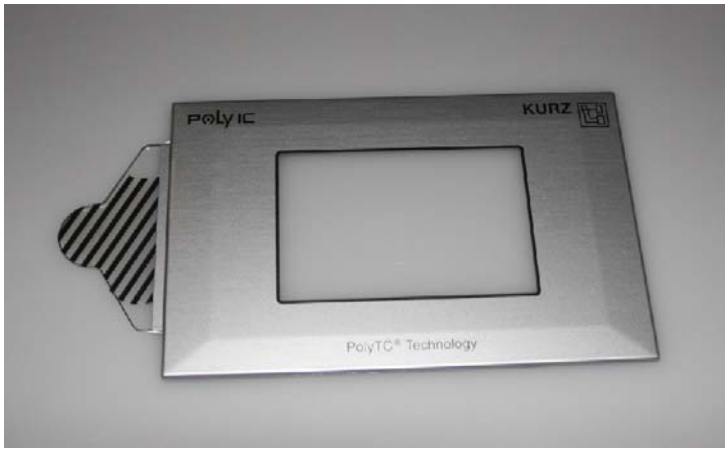

The 3.5-inch display is produced in one step and shows the freely definable positions of the control buttons on the front panel; the correspondingly designed capacitive function foil is integrated on the rear via IML, and is connected to the power supply and the signal processing by means of contacts (middle).
Photo: Sumitomo (SHI) Demag

<IntElect_multi_350_FlipTop>

The 2-component fliptop is produced in groups of 16 on an IntElect multi in fewer than 14 seconds. It is closed by means of a function integrated in the mould before being ejected, in order to reduce the follow-on steps. Photo: Sumitomo (SHI) Demag

<IntElect100_picture_frames>

Picture frames will be produced on the CeraCon GmbH stand using an IntElect 100-340 machine; the frames

will be rendered waterproof by means of a 1K-PUR seal.
Photo: Sumitomo (SHI) Demag

<IntElect100_lenses>

Thick-walled precision lenses are produced on the gwk stand using a fully electric IntElect 100: due to a new mould concept, the influence of the applied cooling process can be rendered directly comparable.
Photo: gwk