Press release
20 October 2011

Mecman Industrial presents precision application and full cover labelling

Mecman Industrial, S.L. with all-electric clean-room injection moulding system and IML innovation at Equiplast in Barcelona

With a compact clean-room production system for medical engineering micro-parts and a new full cover labelling application for the packaging industry, Mecman Industrial, S.L. is exhibiting at Equiplast from 14 to 18 November in Barcelona. At Hall 4 Stand C300, the Spanish agency of the German-Japanese machine manufacturer Sumitomo (SHI) Demag will be demonstrating the performance capabilities, precision and reproducibility of its IntElect and El-Exis SP machine series to the expert visitors.

The smallest model in the IntElect series, an IntElect 50-45 with 500 kN clamping force, will be manufacturing control knobs with a diameter of 3.5 mm from polyacetal (POM) for hearing aids in a cycle time of 10 seconds at Equiplast 2011. The light parts, weighing only 10 milligrammes, and the shot weight of only 280 milligrammes set high quality demands and

require absolute reproducibility. The IntElect, with its precise and sensitive drives and the removal system which is integrated into the machine, fulfil the special requirements of zero-defect production.

Sumitomo (SHI) Demag has designed and created the production cell in collaboration with several partner companies: the 4-cavity cold runner mould with tunnel feed was deigned and constructed by Stamm AG, Hallau/Switzerland. The well-established mould manufacturer and injection moulding business has long specialised in the production of especially demanding micro-parts made of the most varied plastics. They employ many machines from Sumitomo (SHI) Demag for this purpose.

The cabin conforming to clean-room standards and the laminar flow unit controlling the production system originate from the company of Max Petek Reinraumtechnik, Radolfzell. The Filter Fan Unit (FFU) of the laminar flow unit cleans the sucked-in external air, provides a consistent, laminar air flow throughout the mould installation space of the machine, ensures clean-room classification ISO 7 is adhered to in the corresponding production environment and prevents particle penetration.

As a specialist in automation solutions, MAi GmbH & Co. KG, Küps, integrated the six axis robots made by Yaskawa Europe GmbH into the injection moulding machine, the casing for which on the non-operator side has been widened by only 200 mm. The robot is anchored suspended to the fixed tool platens. This design keeps the clean-room compact, the amounts to be moved small, the strokes of the robot short and the

danger of contamination of sensitive parts on the way from the removal of parts to packaging via inspection low. The control knob will be subjected to a fully automatic 100% optical check while still inside the clean-room cabin.

IntElect smart equipment for clean-room production

With its IntElect smart, NC5 control and comprehensive catalogue of options, Sumitomo (SHI) Demag offers injection moulders a flexible and economic machine design from the electric machine series modular system. Due to numerous equipment features, the IntElect 50 is already set up at the standard required for use in producing medical plastic parts. It provides large tie-bar distances, linear guides for maximum parallelism for tool platens, excellent reproducibility with outstanding processing capability values as well as high reliability and availability. These properties rank as the basis for the zero-defect production of medical and medical engineering precision parts. The comprehensive preparation of the machine to present special options offers the highest level of flexibility with customised equipment.

The IntElect 50-45, as the central component of the production system at Interplas, is equipped with a 14 mm screw for the plastification of small amounts of material for small shot weights. The patented, switchable activeLock nonreturn valve closes with a short abrupt turn counter to the plasticising direction prior to the injecting of the melt runners of the nonreturn valve. In this way, it provides a very small and residual mass cap in front of the screw which remains consistent over many cycles. This contributes

towards a high process consistency being achieved and ensures consistently high product quality specifcally with precision parts and very small shot weights such as the hearing aid component. Together with the seamless monitoring of the processing forces during the mould movement by the quickly reacting NC5 machine control, the highly sensitive activeQ mould protection system provides effective protection for valuable moulds against wear or damage.

Like all of its electric injection moulding machines, Sumitomo (SHI) Demag manufactures the IntElect smart at its centre of competence for electric machine technology in Wiehe, Thuringia. It is programmed with eight clamping forces ranging from 500 to 4,500 kN.

High performance El-Exis SP (Speed Performance) series

One year after being launched at K 2010, the new El-Exis SP series is continuing to conquer the quick run applications field in the packaging sector. The El-Exis SP, with its hybrid drive, impresses all those who use it in the high speed production of thin-walled food packaging, closures for beverages, cartridges, plant pots and buckets. In the new series, Sumitomo (SHI) Demag has brought together its long years of experience in the packaging market and has once again successfully launched a machine which will set the pace for the demanding production of parts for food and technical packaging. The El-Exis SP enables the user to move ahead using stable processes, even in areas which are at the edge of packaging production. The machine design thus opens up completely new application areas for injection moulding, which were reserved for thermoforming in the past as a quicker and

cheaper procedure. Even thin-walled throw-away cups can now be manufactured economically using the injection moulding procedure with the El-Exis SP.

Full Cover Labelling provides all-over coverage

The high-performance El-Exis SP series with hybrid drive will be demonstrating its performance capability at Equiplast 2011 with an innovative feature in process technology. Together with Marbach moulds & automation GmbH based in Bad Urach, Mecman Industrial will be demonstrating the manufacture of thin-walled bowls at its stand, with the feature of full-cover labelling.

A special feature of this new in-mould labelling process is that the banner label and the base label are inserted overlapping around a radius, thereby providing complete coverage of the plastic surface with the label up to a high level on the sealing edge. In this way, barrier functions which may be required can be integrated into the packaging by means of labels. For full labelling, Marbach has developed a procedure, in which a "Full Cover Label Placer" inserts the banner and base label in one stroke. Previous IML solutions required a partition on the container base, meaning all-over coverage with the label in the injection mould was not possible.

Machine, automation and controls render the process highly efficient

The new development in in-mould labelling runs on a high-speed El-Exis SP 200 machine (2,000 kN) equipped with a double IML hot channel mould from Marbach. The compact production cell manufactures the 250 g bowls from PP (shot weight 14.2 g) in a cycle period of approx. 3 s. In this process, the Full Cover

Label Placer from Marbach ensures the highly efficient insertion of the banner and base labels in one stroke. The high precision mould stop position of the El-Exis SP ensures the exact positioning of the labels despite the high production speed.

The new NC5 plus control version also demonstrates its advantages with this exhibit as well: as part of the activeEcon function, it is possible to produce a detailed energy consumption analysis of all machine movements for each individual shot and for this to be optimised. Through activeAdjust, the machine dynamics are utilised to the full over the range of controls, which can be adjusted individually. The extended activeQ+ active mould protection means that the valuable means of production of the mould is moved and monitored in a controlled manner not only while being closed, but also opened.

Mecman Industrial, S.L.
Equiplast, 14-18 November 2011
Fira de Barcelona – Recinto Gran Vía – Hall 4 – Stand C300

Mecman Industrial, S.L.

The injection moulding machine manufacturer, Sumitomo (SHI) Demag, based in Schwaig/Germany, has been represented in Spain since the autumn of 2010 by the company of Mecman Industrial, S.L. The company of Mecman, with its headquarters in Sentmenat, Barcelona, has acquired an outstanding reputation in the field of technical services over decades. The owner-managed company of Mecman, which has over 40 staff, has built up wide-ranging knowledge in automation technology as well as the manufacture of machines and equipment. Mecman

operates its own cutting processing and is specialised in carrying out even the most complex types of jobs on-site at the customer's works.

Its customers include large corporations and medium-sized businesses from the automobile industry, packaging or medical engineering sectors. In addition to providing support for the injection moulding machine business, Mecman can also answer all other technical enquiries concerning moulding operations, especially those relating to the maintenance of the means of production.

The company of Mecman offers the full range of services, which Sumitomo (SHI) Demag Plastics Machinery, S.L. likewise provided hitherto. Staff have already been transferred from the Sumitomo (SHI) Demag subsidiary, which closed in July 2010, so as to retain their specialised know-how.

www.mecman.es

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Contact

Jordi Pareras Méndez
Mecman Industrial, S.L.
Avda. Principal, 41
Pol. Ind. "Can Clapers"
08181 Sentmenat (Barcelona)
Tel. +34 902 882 778
Fax. +34 902 882 779
E-mail: jpareras@mecman.es

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

<El-Exis_SP_200_Marbach>

Hybrid high-performance cell built around an El-Exis SP 200 with IML automation and IML mould from Marbach for full-cover labelling
Photo: Sumitomo (SHI) Demag

<3D-cup_Marbach>

Full-cover labelling is the name of the new in-mould labelling process from Marbach, in which the banner label and the base label are inserted overlapping around a radius, thereby providing complete coverage of the plastic surface with the label up to a high level on the sealing edge.
Photo: Marbach moulds & automation

<El_Exis_SP_200_Marbach2>

The compact production cell for Full Cover Labelling consists of a hybrid El-Exis SP 200 high performance machine (left) as well as a Full Cover Label Placer from Marbach (right)
Photo: Sumitomo (SHI) Demag

<IntElect_50-45>

The IntElect 50-45 all-electric injection moulding machine from Sumitomo (SHI) Demag with 500 kN clamping force – here with equipment for the clean-room production of medical precision parts.
Photo: Sumitomo (SHI) Demag

<Control-knobs_hearing_aids>

Control knob made of POM for hearing aids, manufactured on an all-electric IntElect 50-45 injection moulding machine in a clean-room in a 4-cavity mould of Stamm AG

Photo: Stamm AG