Press release
02 August 2011

IntElect machines guarantee the reliability and cleanliness required by medical engineering

Demag Hamilton Ltd. at Interplas with an all-electric cleanroom injection moulding system

Demag Hamilton presents at Interplas trade fair in Birmingham (27 - 29 September 2011) a compact cleanroom production system for medical micro components. At Stand A20 the British branch of the German/Japanese mechanical engineering company will demonstrate the efficiency, precision and reproducibility of its IntElect machine to international specialists from the medical sector. This machine will show its high reliability and availability in the production of precision components for medical, diagnostic and pharmaceutical applications under cleanroom conditions.

At Interplas 2011 trade fair the smallest model of the IntElect series, an IntElect 50-45 with a clamping force of 500 kN, will be seen producing control knobs with a diameter of 3.5 mm made of polyacetal (POM) for hearing aid devices in a cycle time of 10 seconds. These mouldings, weighing a mere 10 milligrams and having a shot weight of only 280 milligrams, make high demands on quality, and require absolute reproducibility. The IntElect machines, with their precise and sensitive drives and automation integrated in the

machine, satisfy these specific requirements with zero-defect production.

Sumitomo (SHI) Demag have designed and developed this production cell in a joint effort with several partners. The four-cavity cold runner mould with a tunnel gate was designed and built by Stamm AG of Hallau / Switzerland. This established mould making and injection moulding contractor specializes in the production of particularly challenging micro mouldings from a wide variety of different plastic materials and uses a number of machines supplied by Sumitomo (SHI) Demag.

The cell, built according to cleanroom standards, and the laminar flow unit above the production system have been made by Max Petek Reinraumtechnik of Radolfzell / Germany. The filter fan unit (FFU) of the laminar flow unit purifies the air brought in from the outside, and provides a constant laminar air flow above the mould mounting space of the machine, which guarantees a cleanroom class ISO 7 production environment, and prevents particles from entering.

MAi GmbH & Co. KG of Küps, Germany, a specialist in automation solutions, integrated the six-axis robot from Yaskawa Europe GmbH into the injection moulding machine, whose guarding is extended by only 200 mm on the non-operator side. This robot is suspended on the stationary platen. This design and configuration keeps the cell compact, the mass to be moved low and the robot's strokes short. It also ensures that the susceptible mouldings are far less likely to become contaminated during unloading, inspection and packaging. The control knobs are even subjected to a

complete, fully automatic visual inspection within the cleanroom production cell.

IntElect smart equipped for cleanroom production

With the IntElect smart, its NC5 control system and its broad catalogue of options, Sumitomo (SHI) Demag offers injection moulders a flexible and economical machine, selected from the modular system of its electric machine range. Owing to its many features, the IntElect 50 is well equipped to produce medical plastic components, even in its basic configuration. It features large tie bar clearances, linear guidance for maximum platen parallelism, outstanding reproducibility and process capabilities as well as high levels of reliability and availability. These features are the basis for the zero-defect production of precision mouldings for medical and medical engineering applications. The comprehensive preparation of the machine for special options makes it particularly flexible for customized applications.

The IntElect 50-45, is at the core of the production system on display at Interplas trade fair, is fitted with a 14 mm screw for plasticization of small volumes of material for low shot weights. The patented activeLock non-return valve is designed to prevent any material back flow over the screw tip, by mechanically closing the valve, using a brief counter rotation of the screw prior to injection. In this way, it guarantees a precise and consistent shot volume over a large number of cycles. This delivers high levels of process consistency, and guarantees high product quality, especially for precision mouldings with very low shot weights, such as the hearing aid device component. Combining the comprehensive monitoring of closing force during

mould movement and the fast NC5 machine control system, the highly sensitive activeQ mould protection system is designed to effectively protect the, often expensive, mould against wear or damage.

Sumitomo (SHI) Demag produces the IntElect smart, like all of its electric injection moulding machines, at its centre of excellence for electric machine technology in Wiehe in Thuringia, Germany. The IntElect smart is available in eight clamping forces of between 500 and 4,500 kN.

Demag Hamilton Ltd.

Demag Hamilton is fully owned by Sumitomo (SHI) Demag and one of the leading importers of injection moulding machines to the British market, accounting for around 15 %. The machines from Sumitomo (SHI) Demag are widely accepted as one of the world‘s leading brand names. The main area of application for the machines supplied by Demag Hamilton is the production of plastic parts for the automotive, IT and E&E industries, as well as for packaging, medical and pharmaceutical purposes, for construction and the production of sport and leisure-time articles.

Demag Hamilton looks after an active clientele of 200 companies, including well-known brands and large factories: Gillette, Avent, GCS Group, Hozelock, Sovrin and many more. In the UK and Ireland the service team services and maintains more than 4,000 installed injection moulding machines. For its 24-hour service for all aspects of the machine, Demag Hamilton also arranges comprehensive training courses – from a programme with an annual training calendar up to customised courses held locally. With more than 30

years of experience as the representation of AEC, Demag Hamilton also offers a lot of peripheral technology for the injection moulding machines as well as complete solutions for ready-to-use manufacturing cells consisting of machine and periphery.

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The all-electric injection moulding machine IntElect 50-45 made by Sumitomo (SHI) Demag with a clamping force of 500 kN – Figure shows a model configured for the cleanroom production of medical precision mouldings

Photograph courtesy of Sumitomo (SHI) Demag

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Control knob made of POM for hearing aid devices,
made on an all-electric injection moulding machine
IntElect 50-45 in the cleanroom on a four-cavity mould
made by Stamm AG
Photograph courtesy of Stamm AG