Press Release
October 28, 2010

New and further developments in the fields of actuator engineering, mechanical engineering and control engineering to enhance overall performance

Sumitomo (SHI) Demag to further increase the dynamics and efficiency of its injection moulding machines

Sumitomo (SHI) Demag Plastics Machinery GmbH of Schwaig/Germany has used the slackness in sales of the year 2009 to push research projects and for new initiatives aimed at boosting the dynamics, efficiency and precision of its injection moulding machines. Intensive analyses in the fields of actuator engineering, mechanical engineering, drive or control engineering in development projects have resulted in numerous detailed improvements. These, in turn, bring about enhanced production efficiency and a whole range of benefits for the customer. At the K 2010, the Japanese/German company will present novel injection moulding machines with electric, hybrid or hydraulic drives by way of its new IntElect 450, El-Exis SP 300 and Systec multi machines.

When we look at injection moulding in its entirety, dynamics and production efficiency stand out as decisive engineering and economic success metrics. The dynamics of injection moulding machines have an immediate effect on their performance ability and productive capacity, cycle time, output and thus productivity. Production efficiency is very fundamentally influenced by precision and process consistency. Both will enhance the overall performance and availability of the machines as well as the quality and consistency of the moulded parts. At the same time, they will reduce the reject rate, and cut on specific energy consumption.

Efforts were focused on speeding up machine movements, reducing energy consumption, and on increasing precision and process consistency in an attempt to even more harmonize kinematics, enhance the capacity of reaction of all components, optimize the drive technology, and to make improvements on the control system.

Intensive analyses made of the Systec hydraulic machine series has resulted in many detailed enhancements. If nothing else, the new El-Exis SP series benefits from many fundamental developments and from the optimal tuning between the motors and control system. Also the all-electric IntElect performance and SE models have been optimized in details. Being the result of joint development efforts made in these past two years, the electric all-purpose machine of IntElect smart is based on the selection and optimization of the best adapted mechanical, electrical and control components by the Japanese and German engineers involved in these efforts.

Methodical enhancement through the whole range of machines was achieved through the further harmonisation of the kinematics on the five-point toggle joint. The toggle joint clamping unit used in the IntElect electric injection moulding machines, the El-Exis SP high-speed machines or the medium and large frame size hydraulic Systec machines is of sturdy and long-lasting design. Owing to its mechanical transmission, it offers highest levels of dynamics and operating speed for fast mould movement and reliable clamping and locking of the mould without requiring any additional energy. Interaction with the linear slides for the mobile mould platen provide for minimal friction loss and high levels of platen parallelism to spare your valuable moulds.

Intensive work performed on the electric direct drives has resulted in enhanced capacity of reaction and faster movements. Speed benefits are not only offered to users the electric IntElect machine, but also to users of the El-Exis SP high-speed machine in which Sumitomo (SHI) Demag uses direct drives.

The activeCool & Clean feature, the oil filter and oil cooling concept activeDrive, the dynamic matching for power transfer of the hydraulic drive as well as the modernized optional electric worm drive of the all-hydraulic Systec machine provide for energy savings and enhanced production efficiency.

Improved after-sales service and retrofit choices and offers

Also users of servicing, modernization or retrofit offers or packages will benefit from the numerous enhancements made on the range of machines. The increases in the efficiency and dynamics of pumps or valves, motors or drives as well as improvements made on screws or cylinders or back-flow locks will prove advantageous to all retrofit solutions and the quality of the spare parts portfolio. Thus, the activeDrive dynamic matching for power

transfer feature has been included in the spare parts catalogue for the retrofit of older machines under the designation of SmartDrive, for example.

Retrofits of the control system of older Demag machines have been popular among users of injection moulding machines for many years. Following the retrofit from the NCIII to the NC4 control, an upgrade from NC4 to the current NC5 control is now in the pipeline.

Harmonization of the platforms in full swing

Since the merger of the activities of Sumitomo (SHI) in the field of injection moulding machines with those of Demag Plastics Group in the spring of 2008, engineers from both organizations have analyzed the products made by the newly established company. Based on such analysis, it was decided to leave the hydraulic or hybrid Systec or El-Exis SP machines respectively on the Demag platform. For all electric machines of the IntElect and SE models, Sumitomo (SHI) Demag will provide a joint platform in the long run through further development of the existing Japanese machine platform.

Both product platforms currently existing are characterized by high levels of efficiency, dynamics or precision even now. Sumitomo (SHI) Demag still anticipates more potential for new customer benefits through the consistent further development and enhancement of platforms, components of processes.

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