

PRESS RELEASE

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Sumitomo (SHI) Demag Hybrid Systec Servo Demonstrates CO₂ Gas-Assist Injection Molding in NPE Booth W623

- **A long, tubular grab handle is being molded using new eGAIM (enhanced Gas-Assist Injection Molding) technology from Linde LLC.**
- **The rugged, high-performance Systec Servo, as compared with a standard hydraulic machine, can achieve significant energy savings.**

[ORLANDO, FL, NPE BOOTH W623 – March 23, 2015]...Sumitomo (SHI) Demag is demonstrating a new CO₂ gas-assist technology on a hybrid Systec 280 Servo. A single-cavity, cold runner mold from Treo Manufacturing, LLC is producing a long, hollow, 680-gram, PC grab handle.



According to a press release about the demonstration from Linde LLC (NPE Booth S33188), “The technology, known as enhanced Gas-Assist Injection Molding (eGAIM), leverages the pressure and cooling attributes of liquid carbon dioxide (CO₂) to reduce cycle times by cooling hollow-channeled parts from the inside. The patented eGAIM system has been shown to reduce cooling cycles by 30 percent or more compared to nitrogen systems.”

The Systec Servo with activeDrive combines the advantages of servo technology with hydraulic pump control. While standard hydraulic pumps run at a fixed speed, activeDrive’s frequency-controlled servo-motor utilizes a variable speed motor with a fixed volume pump. The servo motor automatically matches the amount of oil volume required for each phase of the molding cycle. Compared with a standard hydraulic machine, the Systec Servo can achieve up to a 50% reduction

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in energy use depending on the application.



Featuring a robust design, Systec Series machines can handle large mold weights and are built to ensure many years of dependable operation.

The combination of gas-assist technology and Systec's servo technology enables significant cycle time reduction. Other advantages of the servo technology include:

- Improved efficiency
- Dynamic response
- Fast axis movement
- Reduction of the noise level by half when in automatic mode

The Systec 280 Servo (310 U.S. tons) that is being demonstrated, with a 1450 injection unit and 60 mm screw, has the following maximum specifications:

- Shot weight: 695 grams
- Injection pressure: 27,630 psi (1905 bar)
- Injection rate: 20.62 in³/s (318 cm³/s)
- Injection capacity: 46.56 in³ (763 cm³)
- Dry cycle Euromap 6a: 1.65 s - 17.36 in (1.65 s - 441 mm)

The integrated SDR robot in this demonstration is controlled by the easy-to-use NC5 plus control. Robot parameters are loaded and saved with the mold file setup which also contributes to ease-of-use.

Contributors to the Systec 280 Servo molding demonstration include:

- Mold: Treo Manufacturing, LLC
- Gas-assist process: Linde LLC
- Robot: Sepro America, LLC
- Resin: A. Schulman GmbH
- Mold temperature controller, dryer and loader: Matsui America, Inc.
- Chiller: Frigel North America, Inc.
- Conveyor: MAC Automation Concepts

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The Systec Series is equipped with linear guidance of the moving platen as standard which ensures maximum precision, less wear on the mold and shorter cycle times.

Available in model sizes from 39 to 2248 U.S. tons, energy-efficient, field-proven toggle technology is employed for Systec machines 146 U.S. tons and above; fully-hydraulic operation for models up to 135 U.S. tons. A highly flexible machine series, the Systec is available in multiple levels of sophistication: from the extensively equipped basic version to the high-performance version capable of parallel movements of all axes. Multiple injection units can also be added to this platform for multi-component applications.

Sumitomo (SHI) Demag's worldwide group of companies is dedicated to helping plastics processors compete more effectively in the global market. The company manufactures a wide range of high-precision IM machines for diverse applications. Its all-electric platform (SE and CL series) spans from 8 to 935 U.S. tons, including micro to mid-sized, high-speed, packaging, high-duty, vertical, insert and high-speed multi-shot machine series. Ultra-high-speed hybrid machines (EI-Exis SP and Systec SP series) are offered in models from 165 to 825 U.S. tons for packaging and other thin-wall applications. Configurable, high-performance hydraulic and toggle machines (Systec Series), including multi-component models, are also provided for applications from 39 to 2248 U.S. tons. Equally important, Sumitomo (SHI) Demag has an extensive worldwide network, ensuring customers of sales, parts, training, service and processing support when and where it is needed.

Information on the North American operations of Sumitomo (SHI) Demag can be found at: www.sumitomo-shi-demag.us.

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