



For Immediate Release
General Distribution

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Sumitomo Introduces Next Generation of Direct-Drive All-Electric Machines

(Booth #821, PLASTEC WEST, Anaheim, CA)... Sumitomo Plastics-Machinery introduced today its new SED Series of all-electric injection molding machines to the North American market. With its next-generation direct-drive technology, the all-electric SED provides:

- The high speeds and pressures of high-performance hybrid and hydraulic machines
- The exceptional energy efficiency and cleaner molding environment of other all-electric machines
- Ultra-high precision and repeatability that exceed belt-and-pulley driven all-electric machines

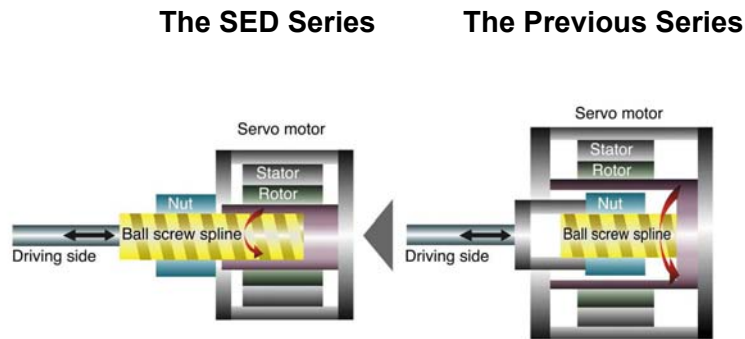
Available in various model sizes up to 200 tons, the SED Series features four direct-drive, Sumitomo-built, AC servo motors with full closed-loop control and digital sensors. All four motions—plasticizing, injection, clamping and ejection—are controlled by these motors. Each motion except plasticizing uses a ball screw, and all four motors are beltless, providing superior mechanical efficiency, repeatability and durability, and avoiding the problems associated with belt wear/adjustment and belt dust.

“Extensive R&D has gone into the design of the SED motors to achieve a lighter, more compact, low inertia design with the best mechanical configuration for each motion,” said Jerry Boggs, Executive Vice President. “The result is a low inertia system that draws power only as it is needed, is easier and faster to stop and start, and is exceptionally

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precise. Additionally, the use of permanent magnet stators has made these synchronous motors even more energy efficient.“



The SED's next generation, direct-drive motors feature a lighter, more compact, low inertia design compared with the previous model. [High-resolution, full-color diagram provided on disk in the Press Kit.]

For injection, the SED's new direct-drive motor design offers several advantages:

- Higher injection power (torque) and velocity, with injection speeds up to 500mm/sec, and injection pressures up to 2900 kgf/cm² for demanding applications. The high torque of the direct-drive, screw drive motor, as compared with a belted motor, is a particular advantage for high-viscosity resins.
- Faster velocity response, unaffected by belt elasticity. Well-suited for narrow pitch connectors and micro-sized parts, the SE30D, for example, has a 50-millisecond velocity response with a maximum injection velocity of 500 mm/sec.
- Unerring velocity control from .01 mm/sec to the maximum velocity, providing improved precision on wide range of parts including thick-wall lenses, visually critical and thin-wall parts

Simultaneous with these performance improvements, the energy efficiency of the motors has been further improved through the use of permanent magnet stators. Being synchronous rather than induction type motors, power is not drawn to maintain position, thus lowering energy use. The new motors also have been designed to accept a broader range of incoming power without requiring a transformer.

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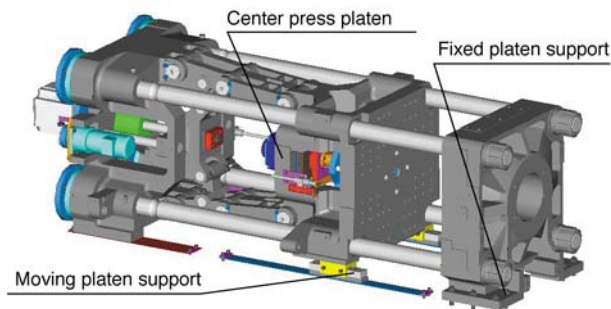
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In addition to a wider selection of injection units, other new injection features include:

- Flash Speed Mode (Standard)—Fast response control of velocity and pressure, before and after V/P switchover, that prevents short shots and warp
- Synchro-Plast Control (Option)—For resins with low viscosity or uneven pellet size, this option optimizes the control of both screw position and back pressure, ensuring plasticizing stability
- SK-II Control (Option)—Eliminates back flow during screw pull back and precisely controls shot density **[See separate press release.]**

For clamping and ejection, the SED features two, direct-drive, digitally controlled AC servo motors. Full closed-loop control of mold open/close position and speed, plus monitoring by precise optical encoders, ensure maximum mold protection and consistent molding cycles. Improvements and added features for the new SED Series include:

- Clamp open/close speed has been increased 50%—to 1200mm/sec—and vibration has been lowered, for improved cycle times and smooth, quiet operation
- Faster response time and a higher ejector speed of 333mm/sec
- A new CPP (Center Press Platen) clamp design, plus increased platen rigidity, for improved force distribution, elimination of short-short and flash problems, and improved mold protection



[High-resolution, full-color diagram provided on disk in the Press Kit.]

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- Extended horizontal clearance between tie bars for the installation of larger mold bases and ease of mold changeover

- Added access space for connecting ejector rods from the mold to the knockout plate
- A new ejector impact absorber feature that helps prevent parts from sticking to the ejector pins
- Moving platen supports, now standard, redesigned with a larger shoe for added support area

For optimum life of the ball screw and toggle pins, the SED is equipped with a highly reliable, automatic grease supply through a valve-type progressive distribution system. This system includes an externally mounted pump unit and easy-to-load grease cartridges that can be changed without shutting down machine operation.

The SED's new N-VIII control, with a 12.1-inch, full-color, TFT flat display and touch-screen capability, offers many added features. SPC/QC capabilities have been expanded to include: storage of data on 100,000 shots for downloading; display of the last 500 shots; and the addition of various charting capabilities including histograms and dispersion diagrams. For visual trending over time, the capability to store and view molding profiles for the last 1000 shots is provided. The addition of 4 data channels allows 8 selectable parameters to be graphically displayed for analysis on a single screen. And internal memory now allows storage of up to 200 mold setups.

The SED Series is currently available in 33, 55, 83, 110, 143 and 198 US ton models.

Sumitomo Plastics-Machinery manufactures a complete line of injection molding machines, from 20 to 716 US tons, including general purpose, all-electric, hydraulic, ultra high-speed toggles and disc molding systems.

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