

Press release

Syntegon Technology

New development for lab automation: APD tool from Syntegon identifies optimal process parameters for tablet presses

- Automated test runs thanks to innovative powder feeding system
- Realistic simulation of subsequent production conditions
- Optimal process parameters determined on an exact data basis

Waiblingen/Germany, October 5, 2022. After the successful launch of the Automated Process Development (APD) tool for capsule filling processes in 2020, [Syntegon](#) is now expanding this expertise for tablet presses. The new, automatically adjustable powder feeder and the APD software offer pharmaceutical manufacturers a complete package to determine the ideal process parameters for each product and easily transfer them to production machines. "While manual analyses used to take days or even weeks, the APD tool achieves faster and more precise results with much less product," says Matthias Moessinger, Senior Market Expert Pharma Solid at Syntegon.

Simulating exact process parameters

"Tablets have a significantly higher number of relevant parameters and quality attributes compared to capsules – from shape or diameter to thickness and hardness, numerous properties play an important role," Moessinger explains. "In the first step, we focused on powder feeding and the various feeder designs; others will follow." The new powder feeding system is specifically tailored to the [TPR 200](#) tablet press from Syntegon. The system can be adjusted automatically to fit every possible stirrer configuration. The impellers have a square and a round side to reflect factors such as the influence of powder movement on tablet properties. In addition, the speed and direction of rotation as well as the inclination of the stirrer blades can be varied.

Faster time to market with laboratory automation

During the product tests, the APD software evaluates and optimizes the process parameters regarding their influence on critical quality attributes. As a major highlight, both the changeover of the feeding system and the tests are fully automated; human intervention is no longer necessary. The APD tool is based on Design of Experiments (DoE) and analyzes the functional relations between material properties, process parameters and critical quality characteristics of the final product. This enables pharmaceutical manufacturers to accurately simulate the production situation and determine reliable parameters thanks to a clearly defined data basis. They save time, reduce product loss, increase product quality, and facilitate process validation.

Process optimization at the OSD Customer Center

The APD tool is suited for tests in the development phase as well as for optimizing existing processes. Together with customers, Syntegon tests both active ingredients and placebo formulations at the OSD Customer Center in Waiblingen with the

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automated feeding system. "Our experts know the challenges and can support pharmaceutical manufacturers in determining the optimum process parameters based on decades of experience," says Moessinger. "We have been technology leader in capsule processing for many years. Now our APD tool and automated powder feeding system also offer customers a structured and particularly efficient solution for process optimizations in tablet pressing. Further innovations will follow."

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Images:



With the new, automatically adjustable powder feeder and APD software pharmaceutical manufacturers can determine the ideal process parameters for each product.



The compact TPR 200 Plus tablet press supports the efficient production of small and medium-sized batches, using an integrated Data Acquisition System (DAQ) to assess tablet quality and process stability.

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About Syntegon

Processing and packaging for a better life – this is what 5,800 Syntegon employees work for every day. Be it with individual machines, systems, or services, Syntegon helps its customers in the global pharmaceutical and food industries to improve people's lives. The company, which is headquartered in Waiblingen, Germany, looks back on more than 160 years of experience and achieved annual sales of 1.4 billion EUR in 2021. In the pharma sector, the company's intelligent solutions enable the

safe and high-quality production, processing, filling, inspection, and packaging of liquid and solid pharmaceuticals. In the food industry, Syntegon's flexible and reliable technologies produce and pack confectionery, dry food, frozen food, and dairy products. With 1,100 service experts and a comprehensive service portfolio throughout the entire machine lifecycle from spare parts management to digital line optimization, Syntegon lays the foundation for smooth production processes for all customers. More than 30 sites in almost 20 countries keep a firm eye on Syntegon's impact on the environment and society. Syntegon is a leader in the development of sustainable packaging solutions, reduces the energy consumption of its machines and pursues ambitious goals to lower its emissions. www.syntegon.com