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Press Release

Coperion and Coperion K-Tron at Interphex

Coperion's ZSK Pharma Extruder Series Now Available in Size 26 and with New K3 Pharma Feeder

Stuttgart, March 2020 – Coperion is expanding its proven ZSK extruder series with a new extruder size in pharmaceutical design: As a result, Coperion now offers the ZSK 26 twin screw extruder that fulfills all of the pharmaceutical industry's guidelines and covers throughputs of 5-20 kg/h, depending on application and materials to be processed. The ZSK pharma extruder series is now available with new, completely integrated Coperion K-Tron K3 pharma feeders. Coperion and Coperion K-Tron will be available to discuss these and other new developments in the fields of feeding, extrusion, and material handling at this year's Interphex (April 28-30 2020, New York NY, USA, booth 2042).

Combined with the already well-known characteristics of its ZSK pharma extruders, Coperion has equipped the ZSK 26 with some new developments. Like the ZSK 18, the ZSK 26 pharma extruder's process section is designed to be free hanging. Thanks to this new design, the product contact parts are optimally accessible from all sides, greatly simplifying machine dismantling and cleaning. The dual-cycle cooling system, which safeguards cooling of both the process section as well as the motor by using water, has now been fully integrated into the extruder's base frame. Likewise, the vacuum pump as well as the KCM control unit for Coperion K-Tron's highly accurate feeders are housed in the base frame. Together, these measures markedly reduce the entire extrusion system's space requirement. Moreover, they enable simple, quick extruder startup at the operator's location and facilitate production, cleaning and maintenance by separating product-contacting and non-product-contacting machine areas.

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Reproducible, High Product Quality

All Coperion ZSK pharma extruders are compactly designed, easy to service, and optimally accessible for cleaning and maintenance. For the highest possible flexibility when feeding liquids and solids as well as during mixing and product melt devolatilization, Coperion uses a modular system for the extruder's process section, comprised of several barrels in which self-cleaning screws co-rotate. The D_o/D_i (outer-to-inner screw diameter) of 1.55 enables secure scale up within the entire ZSK pharma extruder series. The 11.3 Nm/cm³ specific torque enables high throughputs at low screw speeds and thus low product temperatures. The product components' thermal load in the temperature-controlled ZSK process section is also low. Complete integration of the ZSK pharma extruders with Coperion K-Tron's newest line of pharmaceutical feeders ensure exact adherence to the formulation and reproducible high product quality.

Highly Accurate and Tailor-made Feeding of Ingredients

The new Coperion K-Tron line of K3-PH feeders have been specifically designed to meet the growing demands of continuous processing in the pharmaceutical industry. Due to the use of a smaller D4 platform scale incorporating the patented and highly accurate Smart Force Transducer (SFT) weighing technology, these feeders require significantly less floor space compared to previous models. The feeder's modular quick change design allows the easy exchange of feeder types and sizes, using the same scale and drive for fast adaptation to new processes and formulations while also ensuring easy cleaning and maintenance. The quick change feeder bowl, agitator and screw combinations can be quickly decoupled from the feeder drive and provide for easy and fast changeover and cleaning. The updated modular concept features a newly developed drive using a servo motor which helps reduce the overall footprint and offers a much larger turndown range, including low feed rates. For an optimal Wash-in-Place (WIP) result, every unit has an integral two degree pitch facilitating maximum drainage during the cleaning processes.

The modular K3-PH line is designed to facilitate a cluster arrangement of six or more feeders, ideal for multi component continuous processes, such as continuous extrusion. Whether designing for excipients, API's and powder blends with demanding properties such as viscous or adhesive characteristics, rapid-flowing powders, temperature-sensitive fluids or materials with high hazard potential, Coperion K-Tron offers custom designed feeding systems and ancillaries. In the case of the ZSK 26 pharma extruder, the solid material feeder is located on a swiveling

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platform directly above the inlet. Fluid ingredients are fed via liquid loss-in-weight feeders that are installed on a separate frame next to the extruder.

As proudly stated by Stefan Gebhardt, General Manager Business Unit Food & Pharma at Coperion: “With the ZSK 26 in pharmaceutical design, we have succeeded in expanding our proven portfolio of pharma extruders by one important throughput range. We have been able to successfully carry the positive resonance of our larger and smaller machine sizes in pharmaceutical design over to the new ZSK 26. At the same time, we’ve equipped the extruder with more features to simplify operation handling even more. In combination with our highly accurate K3 pharma feeding systems, we are now in a position to realize complete extrusion systems for continuous production of pharmaceuticals in practically any throughput range.”

Coperion is the international market and technology leader in compounding and extrusion systems, feeding and weighing technology, bulk materials handling systems and services. Coperion designs, develops, manufactures and maintains systems, machines and components for the plastics, chemicals, pharmaceutical, food and minerals industries. Within its three divisions – Polymer, Equipment & Systems, and Service – Coperion has 2,500 employees and nearly 30 sales and service companies worldwide. Coperion K-Tron is part of the Equipment & Systems division of Coperion. For more information visit www.coperion.com or email info@coperion.com.



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Along with the Coperion ZSK pharma extruder's well-known characteristics, the new ZSK 26 offers a more compact design and is very easy to clean.

Photo: Coperion, Stuttgart

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Coperion K-Tron's new K3-PH pharmaceutical feeders with significantly smaller footprint are optimized for multi-feeder clusters around a process inlet.

Photo: Coperion K-Tron, Niederlenz