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Press release

Coperion and Coperion K-Tron at Achema 2015

Individual solutions in processing technology and bulk material handling

Stuttgart, May 2015 – At Achema 2015, June 15-19, 2015, Frankfurt, Germany, Coperion and Coperion K-Tron will demonstrate their role as an innovative supplier of systems and key components within the process chain for the chemical, plastics and other industries at their booth no. D34 in hall 5. The systems shown comprise a laboratory extruder ZSK 18 MEGAlab with a screw diameter of 18 mm for smallest production rates as well as a complete batch weighing system with a P100 batch weigh receiver combined with a KT20 loss-in-weight twin screw feeder by Coperion K-Tron. A demonstration unit will show how state-of-the-art SFT Weighing Technology together with advanced control algorithms can effectively filter out vibrations without affecting the weighing accuracy. The product portfolio will be completed with the presentation of an improved version of the patented RotorCheck system for Coperion rotary valves.

Laboratory extruder ZSK 18 MEGAlab for small production rates

The ZSK 18 MEGAlab twin screw extruder featuring a screw diameter of 18 mm is designed specifically for small production rates in the chemical industry. Throughput rates start as low as 200 g/h and go up to a maximum of 40 kg/h. This compounding machine meets the requirements for small-volume production, and is also ideal for recipe development and research.

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The ZSK 18 MEGAlab is a compactly built mobile unit with 6 barrel sections. Supply systems, such as the water supply system and the vacuum generating unit, are integrated into the enclosed base frame together with the motor and extruder control systems. Quick release connections permit rapid cleaning of the process section, which means that changeover from one product to another can be accomplished in very little time.

A particular advantage of the laboratory extruder lies in the reliable scale-up to larger ZSK models, so that results obtained on a laboratory scale can be directly correlated to compounding extruders operating on a production scale. The ZSK 18 MEGAlab can be used for various applications, such as compounding of powder coating and toner, pressure-sensitive adhesives, hot melt adhesives as well as catalysts and catalysts carriers. Another area of application is reactive extrusion.

Feeding and weighing technology from Coperion K-Tron

Coperion K-Tron presents a complete batch weighing system featuring a P100 batch weigh receiver combined with a KT20 loss-in-weight twin screw feeder, mounted on a wheeled cart with a collection hopper. Coperion K-Tron offers batch weigh receivers in various sizes, from 30 to 1,000 liters. The displayed unit combines a vacuum receiver with a reliable weighing system. The resulting combination allows ingredients to be conveyed and weighed so that accurate batching of ingredients can take place on either a cumulative or sequential basis.

The KT20 loss-in weight twin screw feeder is ideal for accurately adding smaller amounts of additives to the batch. Twin screw feeders can handle more difficult materials such as pigments, sticky, bridging or flooding powders, fiber and fiberglass.

A mobile bag dump / sack tip station is being shown as the product source for the P100 batch weigh receiver. The unit consists of a feed bin equipped with a dust hood and bag rest module, mounted in a frame equipped with casters to make it mobile. The bag dump station is ideal for emptying bags into the system in a dust free manner. Material pick-up from the feed bin can be done via pick-up wand, feeder, discharge valve or rotary valve. The unit being displayed features a Coperion ZXD 200 blow-through rotary valve with FXS (Full Access System). All components in the batch weighing station and bag dump station – including the carts themselves – are made of stainless steel and were developed for the high sanitary demands in the pharma and food industry.

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Smart Force Transducer weighing technology for high precision weighing

High demands on accurate feeding, batching and metering of bulk solids can only be met through a highly developed weighing technology. Coperion K-Tron pioneered vibrating wire technology for the process industries, and today continues its leadership with the patented Smart Force Transducer weighing technology. Feed rate control is achieved by continuously weighing the entire feeding system and the controlling the rate at which the system loses weight. The demonstration unit will show how state-of-the-art SFT weighing technology together with advanced control algorithms can effectively filter out vibrations which may be encountered in a typical plant environment without affecting the weighing accuracy.

The SFT technology is available in a variety of load cells and platform scales. The 100% digital design is based on a single wire weighing technology, requires no calibration and features a resolution of 1:4,000,000 in 80 ms. The system weight is captured, linearized and temperature compensated 112 times per second.

RotorCheck protects rotary valve and product

An improved version of the patented RotorCheck system for Coperion rotary valves will be displayed on the Coperion booth. The RotorCheck system is based on a monitoring device that detects any metallic contact between the rotor and the housing. This contact may result either from the presence of foreign particles or from a process malfunction, such as a sudden increase in product temperature, which may cause the rotor blades to expand and grate against the housing. Further causes may be a damaged bearing or incorrect installation and/or maintenance of the rotary valve.

In all these cases, RotorCheck not only prevents serious damage to the rotary valve itself but also protects the product, which in most cases is conveyed by a pneumatic conveying system, against contamination by metallic particles (abraded metal). It is precisely this aspect of product purity – always at the top of the list of priorities in baby food production – that has now become so important in the plastics industry as well. Typical examples are the handling of polycarbonate pellets for the production of CDs and the handling of insulating polymers for high tension cables.

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Highly reliable in operation – no false alarms

With the RotorCheck system, the rotor is insulated from the housing and subjected to an electric charge. Any metallic contact between the rotor and the housing causes a drop in voltage, which is detected by the system and signalled by an alarm. The evaluation software operates in conjunction with a highly efficient microcontroller, effectively eliminating false alarms and ensuring the RotorCheck operates with a high degree of reliability. The built-in electronic self-monitoring system further improves reliability: any interruption in the circuit – caused by a broken cable, for example – is also signalled by an alarm.

Coperion (www.coperion.com) is the international market and technology leader in compounding systems, feeding 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 four divisions – Compounding & Extrusion, Equipment & Systems, Materials Handling and Service – Coperion has 2,500 employees and nearly 40 sales and service companies worldwide.



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Manual bag dump / sack tip station from Coperion K-Tron for clean and dust-free emptying of bulk solids, equipped with a Coperion rotary valve ZXD 200 with FXS (Full-Access-System).

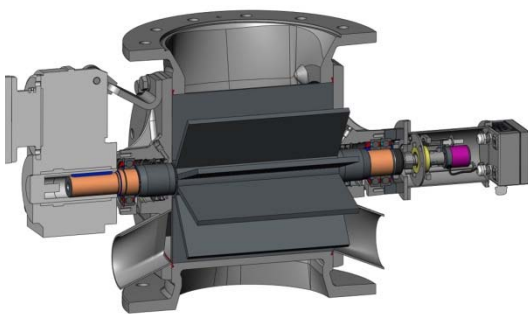
Picture: Coperion K-Tron, Niederlenz

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Laboratory extruder ZSK 18 MEGAlab, specially designed for small production rates

Picture: Coperion, Stuttgart



The modular RotorCheck system prevents damage to the rotary valve and protects the product against contamination by metallic particles.

Picture: Coperion, Weingarten