coperion
confidence through partnership

› compounding & extrusion
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Coperion at K 2019

INOVYN Award 2019 for Coperion's new knife rotor

Düsseldorf, 17. Oktober 2019 – Yesterday, Coperion's innovative knife rotor for the production of extremely low-dust PVC pellets was awarded the INOVYN Award 2019. The INOVYN Award 2019 honours innovative projects and products that contribute to promoting the positive image of PVC as a versatile, economical, safe and socially beneficial material.

As the central component of Coperion's eccentric pelletizing systems (EGR), a new type of knife rotor makes it possible to produce extremely low-dust PVC pellets for cable manufacture. Rotating directly on the die plate of the EGR, and fitted with pelletizer knives that have also been optimized, the rotor (patent pending) permits particularly smooth and gentle cutting of temperature and shear-sensitive plastics. This greatly improves the quality and further processability of the pellets produced as compared to the types previously available.

To achieve this progress, Coperion specified a special metal alloy and design for the production of both the new rotor and the knives mounted on it. Due to these technical optimizations the knives remain in particularly even contact with the die plate during operation. The result is very high cutting quality that forms the basis for achieving the desired substantial reduction of the proportion of fines in the pellets.

Proportion of fines reduced down to detection limit

As a general rule, the occurrence of such fines essentially depends on the PVC recipe used and the knife arm speed required to attain a particular pellet length. In practice it is possible to reduce the quantity of fines by adjusting the knife rotor, but not avoid them altogether. The consequences of these fines becoming detached during pneumatic conveying of the pellets is both increased waste and severe contamination of the conveying pipes and the cooler. A good

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deal of work and time may then be required for cleaning to avoid contamination on next product change.

By contrast, Coperion's new knife rotor/knife combination, thermomechanically optimized in the course of extensive simulation and trials, makes it possible to reduce the proportion of fines almost down to the detection limit across the whole spectrum of throughput rates and cutting speeds tested. The new EGR knife rotor is currently proving its worth to our customers in pilot applications.

Established and reliable compounding and pelletizing technology

Coperion developed the EGR eccentric pelletizer especially for operation in conjunction with its Kombiplast KP two-stage processing systems. With the combination of a twin screw extruder ZSK and a single-shaft discharge screw ES-A, these ensure the gentle build-up of pressure required by shear-sensitive compounds being pressed through the die plate of the EGR. All this adds up to a reliable, proven technology for the gentle and economical processing and pelletizing of hard and plasticized PVC recipes, as well as of HFFR recipes or elastomer-based cable compounds. Coperion can draw on decades of experience in the design and construction of complete plants for the processing of temperature and shear-sensitive materials – from material handling and feeding, to dry blend production, compounding, and pellet cooling, to storage and filling.

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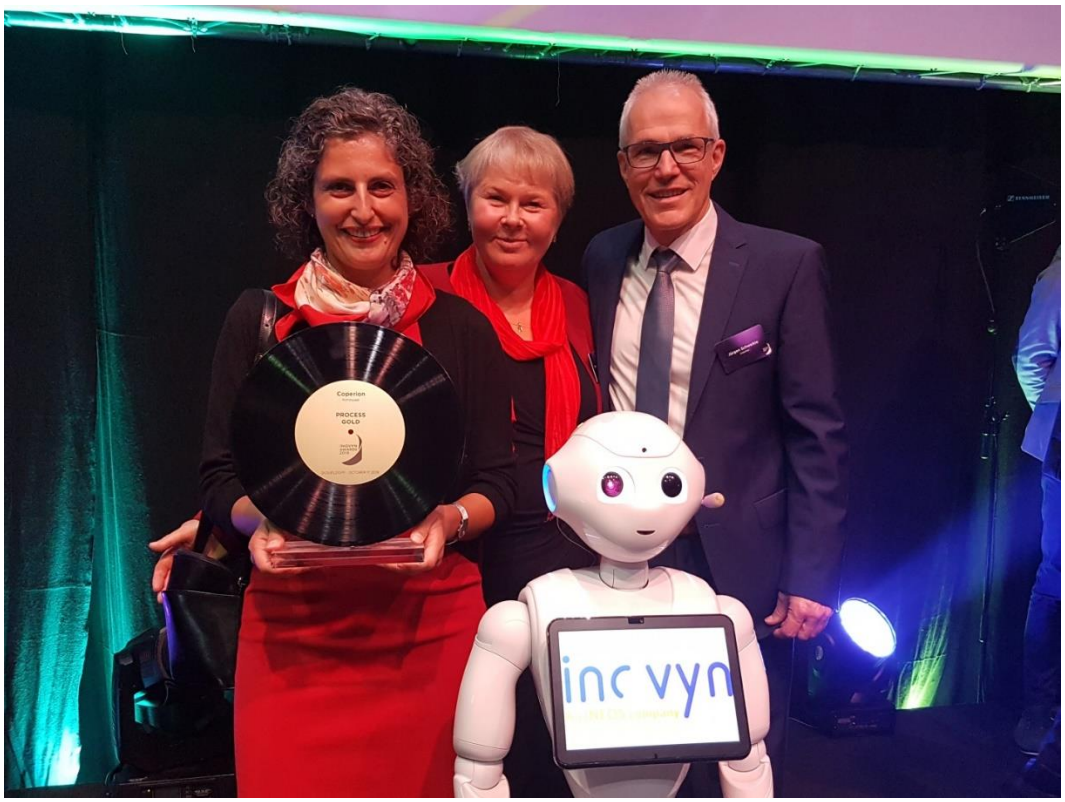
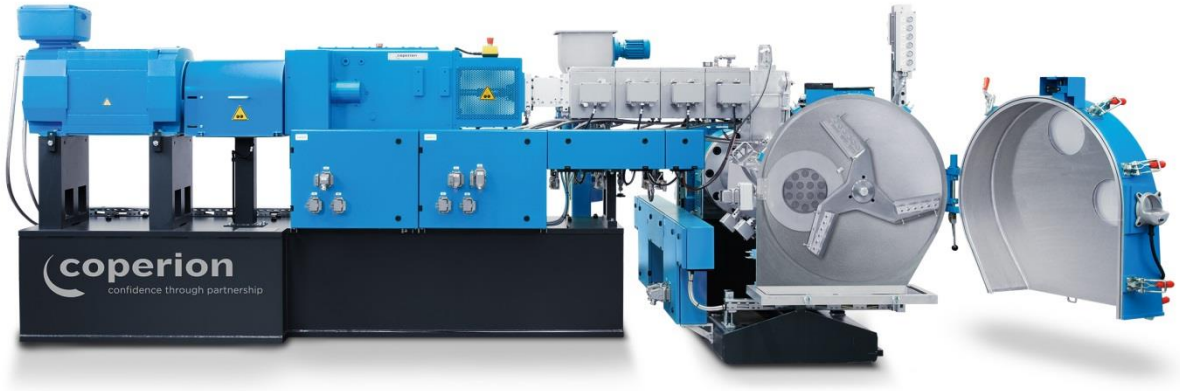


Maria Hölzel, Tatiana Vlasova and Jürgen Schweikle of Coperion at the award ceremony in Essen to accept the INOVYN Award 2019

Photo: Coperion, Essen



Coperion's Kombiplast KP two-stage processing system, equipped with EGR eccentric pelletizer and the new knife rotor (patent pending), for the production of enhanced quality PVC pellets.

Photo: Coperion, Stuttgart

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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 four divisions – Compounding & Extrusion, Equipment & Systems, Materials Handling 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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