



High Throughput Cartridge Lengthens Filter Life & Product Quality in a PET Recycling Line Supplied by Starlinger

In a Starlinger recoSTAR® Line installed at a European Recycling Company, Nordson's New BKG® Screen Changer Cartridge increases filter life up to nine times.

A screen changer filter cartridge, named FlexDisc™, designed to resist deformation and enhance polymer flow has enabled the operator of a high-throughput PET recycling line supplied by Starlinger recycling technology to reduce the frequency of filter replacement and improve pellet quality.

Installed in a “bottle-to-bottle” recycling line at a European company, Starlinger's recoSTAR® PET 165 HC iV+ recycling line includes a BKG® HiCon® K-SWE-4K-75/RS melt filter situated between the extruder and the underwater pelletizer. The line, which operates “24/7/365,” converts PET bottle flakes to rPET with positive opinion by the European Food Safety Authority (EFSA) for re-use in bottles, with adjustable intrinsic viscosity levels depending on application.

When Starlinger's customer replaced a standard filter medium in the screen changer with Nordson's new BKG® FlexDisc™, the filter life was lengthened from eight to 72 hours.

Besides prolonging filter life, the design innovations of the new filter cartridge also address the requirements of high throughput systems such as the 1,400 to 1,600 kg/h (3,086 to 3,527 lb./hr.) Starlinger line. The larger filter area of the cartridge and the elimination of stagnation zones reduce pressure variations that can detract from pellet quality. In addition, there is less material lost in backflushing, and there are no metal impurities.

In addition to the considerable increase in screen life, a 40% reduction of the backflush amount compared to the previous system (a conventional backflush filter) was realized. The resulting waste reduction alone led to a short pay-back of the replacement investment. The available filter area is 1,672 cm² (260 sq.in.) and the filtration fineness is 50 micron with the used screens.

The robust, stable structure of the new filter cartridge prevents pressure loss and deformation of the steel filter fabric, or screen medium, enabling it to withstand the high



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mechanical stresses encountered during production startup.

The new BKG® FlexDisc™ is an alternative to standard filter discs, in which surface area is increased through pleating of the filter fabric—that is, installation of the fabric in a wave or wrinkle pattern instead of being flat. The pleating makes the fabric susceptible to mechanical stresses, which can reduce the efficiency of melt filtration by causing the pleated layers to be pushed together or squeezed during processing. This also reduces the working life of the filter.

Starlinger recycling technology, a division of Austrian-based Starlinger & Co. Ges.m.b.H., provides machine solutions for the recycling and refining of a wide scope of plastics such as PE, PP, PA, PS, BOPP and PET. Starlinger PET recycling systems produce food-safe rPET and are approved for use in food applications by many brand owners as well as various national and international authorities.

[Visit <http://www.starlinger.com/en/recycling>.](http://www.starlinger.com/en/recycling)

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