



Piston screen changer with novel venting

In production systems with one or more extruders (e.g. spinning systems or film production systems) continuous piston screen changers are being used increasingly frequently.

The requirement here lies in changing screens during production without the related production interruption or necessary system standstill.

A production interruption is caused, in normal melt filtration systems, by air bubbles in the screen nest during the changing of the contaminated screen.

A new "venting system" has been developed by ECON which is also highly suitable for production systems as this venting system only produces negligible pressure fluctuations in the melt flow.

In addition, it is also possible at any time to correlate venting duration and pressure drop in the melt flow.

Venting is implemented automatically, thus excluding operating errors. After the screen support piston is retracted and the screen nest has disappeared into the screen changer unit, the screen support piston is actuated by the automatic system and moved to the venting position.

The screen nest is filled with plastic melt for the duration of the adjustable venting period and the air pressed out via the venting channels.

The novelty of this development leads all venting channels to a central bore in the screen support piston and this bore can be changed in size. This makes it possible, in combination with an adjustment to the venting position, to implement a precise correlation between venting duration/pressure drop for each individual application.

Another advantage lies in the integrated "spray protection" as "spraying" of the plastic melt is no longer possible towards the operator side during venting or screen changing (especially with low viscosity materials combined with high processing pressures). This means that expensive, complicated and user-unfriendly covers for the filter unit are not required.

The newly developed venting system was first installed in 2 extruders of a polyester fiber spinning system in Japan. Two ECON screen changers (ESK 55BW and ESK 90W – a backflush screen changer and a continuous screen changer, both with automatic venting systems) were used. Both filter units functioned perfectly with an average constant operating pressure of approx. 100 bar upstream of the spinning pump. It must be noted that new material was processed in the line with the ESK 90W and recycling material in the line with the ESK 55BW.

This advantage enables an amortization of the above-mentioned piston screen changer with automatic venting system in just a few months.

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