

Strong guidance for sensitive materials

An innovation by FAES equips sensitive films with leader and trailer belts and guides them safely through the converting lines



The new Leader Applicator by FAES

For the processing of sensitive and demanding films, it is recommended to use smart "helpers" that "smooth" the way of the materials through the slitting and winding lines. This is where so-called leader and trailer belts come into play. They are pulled in by the machine, before the real film is cut and wound up, and serve not only as a protection for the sensitive material, but also for connecting single film segments or signalling the start and end of a web. Moreover, the leader belts may be printed with company logos, product names, barcodes and numbers and thus serve as an effective form of advertisement or information.

The FAES AG from Wollerau, Switzerland, does not only count among the leading providers of slitting and winding machinery for the processing of thermal transfer, dye sublimation, security and holographic films, but also supplies lines for the automatic feeding of these leader and trailer belts.

"The belts are exclusively pulled

in square in relation to the film," explains Andreas Kaufmann, sales director at FAES, in an interview with C2. "In this way the leaders cannot only be applied especially quickly on exactly defined spots on the film, but we are also able to laminate several belts simultaneously – that is absolutely free of folds and bubbles."

The special challenge of these applications can be found in the fact that very different film strengths and types interact with each other: Thermal transfer and sublimation films are about $8\mu\text{m}$ thick, leaders and trailers, however, range between $20\text{-}50\mu\text{m}$. FAES has found an interesting technical solution for this requirement.

It's all about the gap

The experts at FAES have taken a typical thermal transfer film, which is wound from jumbo rolls with widths of 1000mm to lengths of, for example, 450m and cut into finished rolls of widths of 110mm. "The machine is stopped, before the length of 450m is

reached," explains Kaufmann. "Next, the Automatic Leader/Trailer Applicator (ALA) is used. The width of the belt is cut out square in relation to the film. For this, the film needs to be stretched laterally and held by a vacuum."

As an alternative for cutting, a waste-free application is possible, where only one cut is placed and a sufficiently large gap is created by moving the film backwards.

The gap that is created by one of these two methods is then used to apply and laminate different belts by means of a special belt guidance and adhesive tape rolls. Depending on the requirements, different films and tapes may be combined with one another. In order to round out the application process the leader belt is cut square along the film web, the vacuum is dissolved and a connected main roll will be the end result.

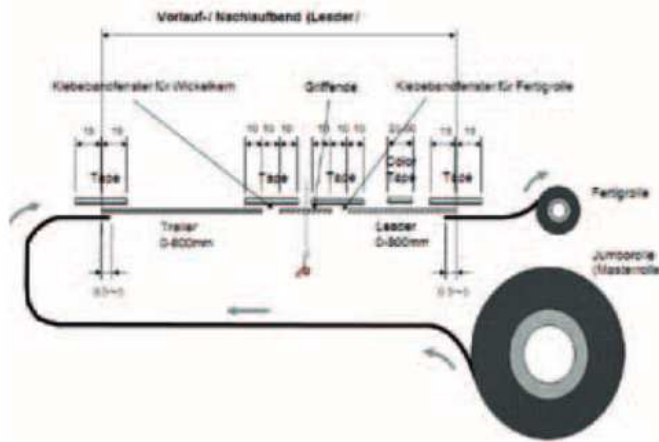
Complex technology - in the blink of an eye

With laminated leaders, the film now runs through the cutting unit and



A combination of a slitting and winding machine and a turret winder with automatic leader applicator

finally reaches the winding station. At a predefined position, the material is stopped. The finished roll is now wrapped with a part of the trailer and leader belt. The other part is not yet wrapped. "At this point our turret winder comes into play," describes Kaufmann. "By turning the duplex



This schematic illustration depicts the application of a leader belt

of the leader belt is unwound again, the finished roll is put into front position and the new core is pivoted into winding position. Exactly at this point one can now find an open splice (adhesive tape window between the two belts that were pulled in), which then lies exactly on the newly wound core."

An automatic cross-cutting operation follows, i.e. the leader film is separated from the trailer film and the remaining leader belt film of the finished roll is wound. By means of a fitting alignment of these belts the finished roll can be sealed and additionally offers a handle, so that the protection film may be replaced upon first opening. The leader

belt is now glued to the new core and the machine can start a new slitting and winding cycle. Even if the process of leader application may appear complex, it is now possible to pull in leader and trailer belts within about 15 seconds by means of the new FAES technology.

"In the meantime we are offering three fully-automatic and one half-automatic system for leader application," underlines the Swiss. "All systems can be installed and integrated on different winding machines or fitted to individual customer needs. All systems can be modified for different film types and leader thicknesses within a very short amount of time." ■