More than nonstop

UR Precision – the new splice technology from Kocher + Beck ensures more than just a nonstop feed of web based materials into printing or converting processes.

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A higher degree of productivity creates a competitive advantage. Against this backdrop plus the steadily growing demand for material-, time- and energy savings within the area of industrial print production, Kocher + Beck has developed an intelligent nonstop winding system which offers an array of additional features for further optimization by utilizing an ultramodern drive concept. A major aspect of this is the integral energy regeneration system.

Nonstop technology nowadays is no longer just for the typical long print runs within the label- and narrow-web-printing industry, but is also finding a highly sophisticated field of application, primarily within complex process combination printing- and value adding-equipment. Such high end products must guarantee an ideal operating level in 3- and 4-shift models and such equipment must be designed for fast job change over with a minimum of energy-, material- and labor utilization.

Peripheral equipment, such as automatic splicing systems have to fulfill the very same demands as the entire process chain. Communication of all systems on a higher level contributes in its entity to secure a continuous, well defined predictable efficiency, which can be seen directly on the bottom line.

Basic preconditions for the operating efficiency of nonstop winding systems are guaranteed reliability linked with process stability and of course the typical measurable bottom line impact parameters such as time savings for manual roll change or total elimination of additional start-up waste in a nonstop mode.

Kocher + Beck's new innovative winding system "UR Precision" offers an array of features over and above that previously seen, to further optimize economic efficiency.

Isolation dancer provides perfect web tension

An integrated isolation dancer provides a constant web tension which is unaffected by the splice cycle itself and the moment of inertia caused by the new roll acceleration. The preset web tension always remains constant while being fed to the printing and converting process. This results in less waste and an improved printing result, in particular on processing tension sensitive materials.

Scissor cut transfer unit

The scissor cut transfer unit is the jewel of the nonstop winder. The unit clamps the web instantaneously and cuts it via a scissor cut principle before the actual web transfer happens. The web is then being attached to the core with its linear edge. This revolutionary method leads to a controlled web shift and avoids start-up waste at the core by means of zero fold-back.

Winding print inside or print outside without having to utilize a turn bar unit prior to the winding process is an additional advantage of this transfer method.

Removal of the finished reel does not require floor contact and therefore no contamination of the processed print substrate.

Scissor cut transfer unit at the nonstop winder „UR Precision“ by Kocher + Beck

Job save and recall function

The servo based drive- and control concept allows for storing and recalling of job related winding parameters, such as web tension values, taper tension characteristics or roll diameters. On repeat orders, all values can be retrieved within seconds. This feature allows you to further avoid additional time- and material expense for any re-parameterization.

Presetting function / Roll diameter calculation

Likewise, a presetting of new rolls at the loading position of the unwind splicer is carried out by means of an ultrasonic sensor which indicates the web diameter- and web tension pre adjustment to the drive system.

Roll diameter calculation starts straight after the splice cycle via an integrated encoder system. The remaining core waste is precisely defined independently from running speed. A high degree of process stability plus optimum use of material is guaranteed. Web tension accuracy is provided at all times by keeping the trailing edge attached to the core.

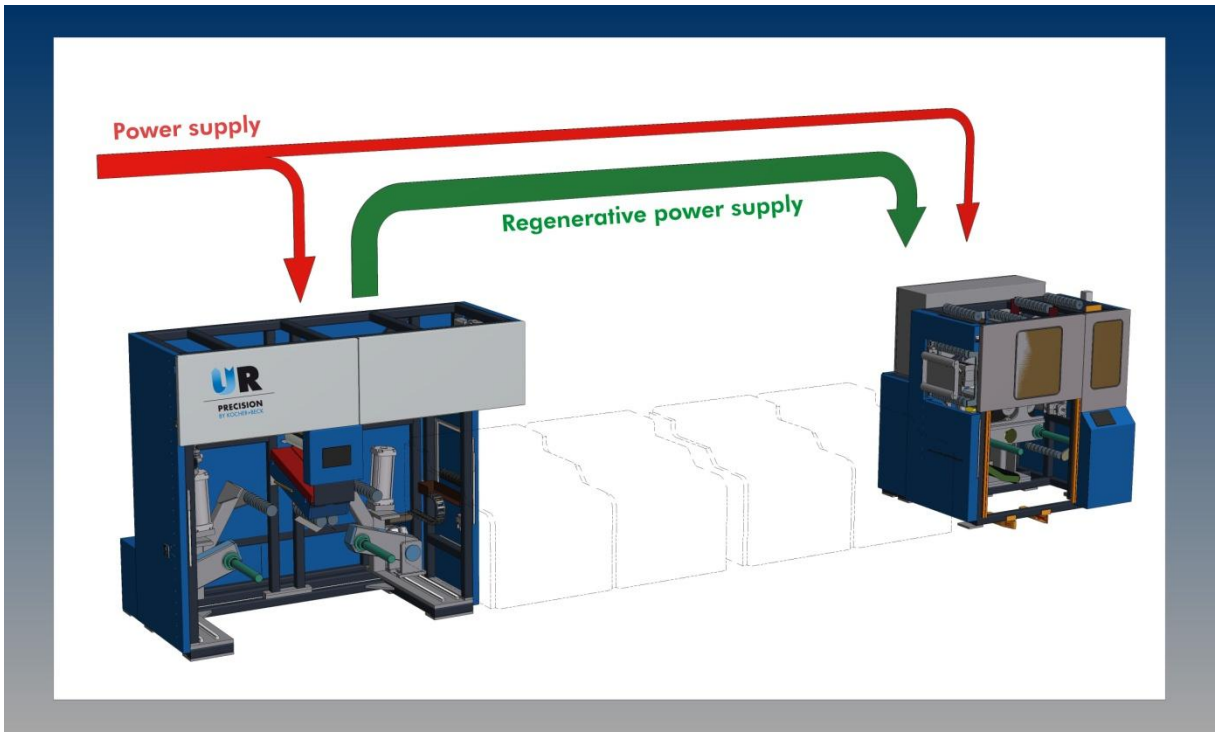
Power regeneration / Energetic balance

The main energy consumption in a typical label combination print environment is still by far the drying system UV / IR or hot air. Whereas dryer manufacturers are working extremely hard on developing new energy saving solutions, it is incidental that a process chain upgrade through nonstop winders automatically results in an additional saving potential up to 20 % of the rated electrical power of the dryers.

Even though all well-established lamp systems are equipped with power supply units which are reducing its rated power input in standby mode, the latent consumption factor during process interruption significantly increases the overall energy usage.

Kocher + Beck winding systems “UR Precision” are based on a modern and sustainable energy concept and feature servo motors and drives of the latest generation, which are triggered through a can bus system connected to an industrial PC. The drives themselves are linked to a regeneration interconnection. Costly permanent air pressure use being avoid to the greatest possible extend.

The power created from the motor braking energy at the automatic nonstop splicer is not reconverted into heat, but is mainly (up to 80 %) supplied to the transfer rewinder in order to save energy and to reduce the impact on valuable resources.



Conclusion

Maximum increase of productivity is the guideline for the development and implementation of the new nonstop winder series “UR Precision” from Kocher + Beck.

Ergonomic, user friendly operation plus a self-explanatory structured user interface are convenient features of a future oriented machine design. The latest standards on safety engineering are also incorporated and complete the overall design.

A monitoring phase is taking place in close collaboration after a successful market introduction late last year at X-Label. All results will then gradually enter into further technical development.

(von links nach rechts): Tan Pflieger / Betriebsleiter X-Label, Gebesee, Daniela Kögler / Produktionsleiterin X-Label, Gebesee, Karin Enderle / Verkaufsleiterin Wickeltechnik, Kocher + Beck, vor dem Abwickelautomaten UR Precision 440