Position indicator cuts downtime

Monitored size adjustments expedite setup, changeover.

Increase system availability. Reduce setup times. Minimize waste. Ensure product safety. These are the requirements for optimizing size changeover in production systems. Intelligent systems that expedite product changes and enhance ergonomics are in demand.

As a result, Zahoransky, a supplier of (tooth)brush production, packaging machines, mold construction and automation, now integrates a monitored size changeover system, known as ERCO (Ergonomic Rapid Changeover), into its Z.PACK blister packaging machines. Electronic position indicators from **SIKO Products (Booth C-5633)** serve as the foundation for the ERCO system.

As Jörg Philip Zimmermann, head of Product Sales Packaging at Zahoransky, explains "Our aim was to design the Z.PACK in such a way that the process would be reliable enough to eliminate operating errors and therefore waste and damage to the machines. We also wanted to reduce the refitting times significantly and thus save money for our customers." The packaging division was able to see how this could be possible through comparison with their colleagues in the brush machine business unit, where monitored size changeover . . . with an electronic position indicator from SIKO has already been implemented successfully.

BUS-COMPATIBLE INDICATOR

Compared to the brush machine, the distinctive feature in the Z.PACK machine is a result of the linear movement for which a monitored size changeover was to be implemented. The individual stations on the packaging line are moved in a straight line on two guide rails and must be repositioned precisely for each changeover. The ERCO concept already plays a part in this: Thanks to the quick-changeover system, the individual stations can be moved with minimum effort using one finger. To further ensure process reliability, Zahoransky chose AP10S electronic position indicators with an integrated linear magnetic sensor, which facilitates precise linear measurement of the manual slide adjustment on the guide rails.

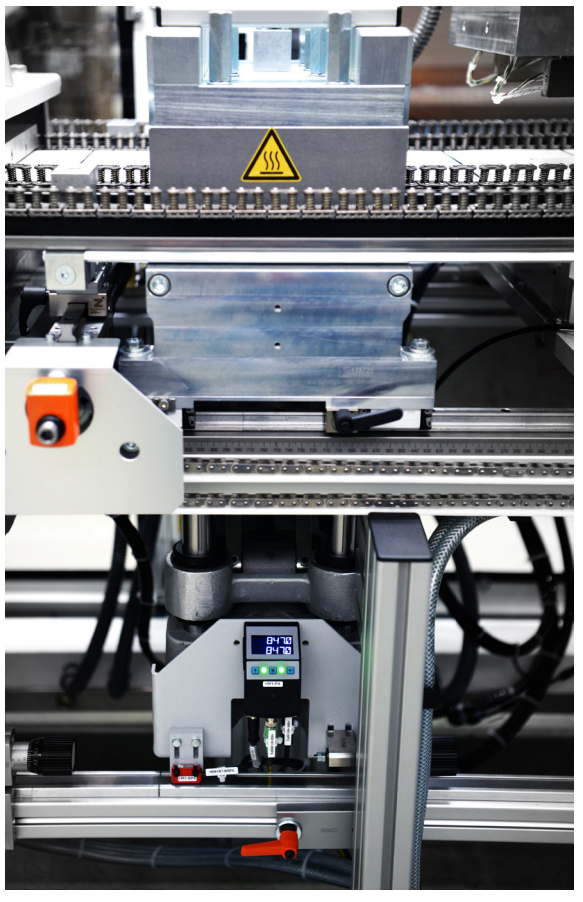

Photo credit: © Zahoransky

The guide-rail-mounted stations on the Z.PACK machine adjust easily and quickly thanks to SIKO position indicators.

The bus interface sets the electronic AP10S indicator apart from mechanical variants. Thanks to bus integration in the position display, the required process reliability is achieved centrally via the machine's programmable logic controller (PLC). The PLC sends target values to the position indicator and reads the actual values measured. The target values are set up in a recipe management system within the controller. The machine controller does not enable the system until feedback is received to confirm that all the manually set positions are correct, effectively preventing waste and damaged format parts due to incorrect adjustment of axes. Position status is displayed by LEDs: green for "position correct" and red for "position not correct." This provides the operator with immediate and clear information about whether the station has been positioned correctly. The external magnetic sensor for determining the correct position measures extremely precisely with an absolute accuracy of up to +/- 35 µm. Following adjustment, the machine can be restarted only if all LEDs are green.

ADDITIONAL FUNCTIONS

The standard Z.PACK machine with a chain length of 4m includes the following stations, each of which can be equipped with an AP10S position indicator beginnng with the material infeed into which the blister film is fed, preheated and deep-drawn with a blister mold that matches the mold stamp—as a positive or negative mold.

Photo credit: © Zahoransky

The green LEDs of the SIKO AP10S position indicator clearly indicate that the stations on the Z.PACK blister machine are set up correctly and the packaging process can continue.

Product is inserted by hand or automatically by a pick-and-place unit. Then the cover material, such as paperboard, Tyvek, aluminum, polyethylene terephthalate or polyvinyl chloride film is fed in, and the blister is sealed by heat or, optionally, ultrasound. Finally, partial or complete cutting is carried out.

Additional stations can be integrated on Z.PACK machines with chain lengths ranging from 5 to 11m and can be equipped with position indicators for size changeover, insertion of leaflets, laser or inkjet printing, blind imprinting on the package edge, perforation of paperboard and film, folding of filled blisters, camera-aided monitoring and scanning of barcodes. All stations must be adjusted to the new film width on every product change—and this must be done precisely. Cutting contours and sealing also must be exact. The SIKO position indicators help achieve this precision.

FASTER CHANGEOVER

Inclusion of AP10S position indicators is optional but always recommended. Monitored size changeover pays off especially for lines that experience frequent size changeovers like those found at contract packagers.

The cost-efficiency argument is particularly important for Zahoransky, as Jörg Philip Zimmermann explains: "The benefits are immediately perceptible. Setup work is cut to a minimum; conversion to a new product takes place . . . more quickly, precisely, safely and ergonomically for the operator. In fact, we are able to halve refitting times with the SIKO position indicators." This positively impacts the availability of the system, which is ready for production much more quickly and eliminates waste.

Moritz Müller, position line product manager at SIKO, is delighted by the extension of cooperation between the companies. Noting SIKO's mechanical position indicators have long aided changeover on Zahoransky machines, he says, "In recent years, the company has taken a number of steps in the direction of monitored size changeover—the keyword being ERCO—and in doing so has put its trust in SIKO's technical competence. In view of the high level of process reliability and the significant reduction in setup times, the demand for intelligent, monitored size changeover is increasing . . . . This has now led to an extension of our cooperation in the packaging division."

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