

Packaging with vision

In the area of shrink-wrap packaging, the international company Aucouturier, based in France, is recognized as one of the leading manufacturers of packaging machines and packaging lines. Over 50 years of experience make this company a qualified partner for innovative and product-specific packaging solutions. Major brand name suppliers such as Nestlé, Brioche Pasquier, Harris and Lu belong to Aucouturier's 2,300 customers throughout 104 countries.

The application areas of Aucouturier's solutions are mainly connected with the food industry (biscuits, breads, bakery, ready meals, steaks, etc.), as well as other areas such as cosmetics and hygiene products (soaps, tissues), contract packaging or co-packaging (CD / DVDs, magazines), and chip cards. With a performance rate of over 500 packages per minute, the high-tech horizontal wrapping machines (Flowpack packaging process) are the highlights of this company.

Wrap packaging

Flowpack is a continuous process whereby products are wrapped into a flexible printed or transparent foil. Various foil materials such as polypropylene, polyethylene, laminated paper and foil, mylar, cold-welded materials, polyester (PET), glassine, PVC, shrink films can be used. The flexible foil is first unrolled from a coil. The product is then wrapped by creating a tube around the product with the mold. The longitudinal sealing group then welds the foil lengthwise

using sealing wheels. The last step of the process is carried out by clamping jaws which weld and cut the foil transversally to build the packets. The sealing wheels and clamping jaws are heating elements that allow hermetic sealing of the packaging, which is essential for the conservation of food products.

These compact machines, which function based on the flowpack principle, are highly intelligent and flexible. They automatically adjust to a large number of product formats and create packaging of the highest quality. Successful sealing and positioning of the printed foil is a very important criterion due to the high cost of foil material. Wastes are minimized using automatic settings and the well-known "no product, no foil" technique.

One platform for a new generation of machines

Aucouturier will be presenting its new generation of horizontal wrapping machines – the AF600 – at the

EMBALLAGE 2004 trade fair in Paris from the 22nd to the 26th of November. For the new development, the machine manufacturer has decided to rely on B&R for the first time. "After using various heterogeneous automation systems for many years, we wanted to streamline the control of our machines using a single platform. The PC-based solution from B&R made this possible", explains a very satisfied Joël Métier in charge of technical management.

Streamlining and developing the new AF600 was possible because of the perfect cooperation between the specialist teams at Aucouturier and B&R France in both the fields of mechatronics and automation. The common research resulted in a real optimization of all machine components, which also led to considerably reduced costs and increased operating comfort. This cooperation also gave birth to Aucouturier's innovative concept for the AF600 called "PackVision", which will also be extended to the whole machine range!





“Our strategy is to offer complete lines that have a high degree of modularity and flexibility. That is why our new machine generations must be equipped with high-tech electronics.”

Pierre-Marie Guérin, Head Manager Aucouturier

The PackVision


The new Aucouturier concept “PackVision” is based solely on B&R architecture. This architecture uses just one embedded PC Power Panel which handles the visualization, controls servo motor drives and handles machine sensors and actuators. Therefore, an extra control system is not required because the Power Panel takes care of all corresponding functions.

Programming, commissioning and maintenance of all automation and drive systems is carried out with one single software tool – B&R Automation Studio. “All troubles associated with communication errors between systems from different suppliers and with software multiplicity are now over”, stresses Joël Métier.

Synchronization of the various motorized units (product in-feed conveyor, longitudinal and transversal sealing groups) is the most important requirement that must be met to ensure that the wrapping machine will work well. The higher the production rate, the more complex the synchronization. This is particularly true when handling multi-format products, desynchronization/resynchronization on the fly, as for the option “no product, no foil”, or print mark correction for printed foils. Fortunately, these commonly used packaging machine functions are integrated in the powerful B&R drive systems, and are fully implemented with dedicated and flexible PLCopen function blocks. These PLCopen function blocks can be adjusted to the specific needs of each machine and programmed in all standard languages (ladder diagram, instruction list, structured text and ANSI C). The increased performance of the machine is also due to the use of standardized Ethernet Powerlink technology as a unique fieldbus for connecting and synchronizing intelligent ACOPOS servo drives to B&R 2003 I/Os and to the Power Panel.

The Industrial PC with “PackVision”

is the machine’s core where all available information (real-time production statistics, history data, settings) is located centrally. The Compact Flash memory can be removed and can have a size up to 2 GB. This allows an enormous amount of data to be saved, resulting in total traceability. In addition, more than 100 formats with three levels of access have been saved in advance. The ability to react to production disturbances is optimal because all important operating values for the systems are displayed by “PackVision” and are easy to access. All vital machine data can also be accessed remotely using the machine’s modem, which connects it with the outside world.

The newly developed wrapping machine AF600 can now be easily integrated in a complete production line. The Ethernet TCP/IP interface, which is part of the basic layout of the embedded PC Power Panel, provides the necessary communication openness with other devices on the line and enables transparent communication. 



Top: Debut at the Emballage (Paris) in November: AF600 wrapping machine from Aucouturier with the “PackVision” automation concept.

Middle: Triple package for individually wrapped chocolate bars.

Bottom: Complete packaging line for cakes.

