



Flexographic printing

Flexible flexo

With consumers growing increasingly environmentally conscious, the soft package market has seen rapid growth. This is good news for Qingzhou Ekofa, one of China's largest flexo press manufacturers. Over the past decade, Ekofa has provided hundreds of flexo presses for customers all over the world. Thanks to B&R control technology, Ekofa's new machines have the flexibility it takes to meet the changing demands of an evolving market.



Machines that use water-based ink have unique design requirements, which Ekofa meets with its new upper web-passing design.



With the rapid development of the domestic economy, Chinese producers face heightened demands on product quality, food safety and green packaging. As a result, there is a growing market for flexo presses that use water-based ink. This places new requirements on machine design, which the Ekofa XLS series solves with a new upper web-passing design for faster drying. In designing these new machines, Ekofa created a faster and more efficient flexo press.

When Ekofa began seeking a control solution for its high-end machines, they were immediately drawn to B&R's integrated register control solution, as well as its universal engineering platform, Automation Studio. B&R's extensive experience in the printing industry gave the Ekofa team the confidence they needed to move ahead with developing the new machine based on B&R technology.

Register control as standard software

For Ekofa, one of the most attractive features offered by B&R is that its register

control technology is fully integrated, unlike a traditional solution with separate units for logic, motion and register control. A Power Panel from B&R is able to handle everything from motion and register control to logic and HMI – a clear jump in competitiveness and cost-efficiency compared to the previous system.

B&R's specialized library of register control algorithms is based on more than a decade of experience in the printing industry. Standardized and modular, these functions can be effortlessly reused to reduce the time and cost of development. B&R's tension control module, for example, is widely used in web printing to implement open-loop, closed-loop and various other control modes for rollers. Adapting to any paper or film with different tension requirements is a simple matter of adjusting a few parameters.

B&R's register control functions form the core of the printing process. By combining the modules for color mark detection, registration control and electronic gears and

cams for motion control, B&R has drastically shortened the development cycle for the machine's processes and systems. Ekofa uses this software for more efficient development of its XLS and Kangtai III series.

Double the flexibility

During project development, Ekofa engineers benefit from Automation Studio's extensive libraries without having to switch back and forth between different software tools. They can also customize modules, such as the automatic mark locking function, to encapsulate their expertise and reuse it with maximum efficiency.

The printing industry demands machines with greater flexibility – including online adjustment and fast changeover – to adapt to ever-changing requirements. Ekofa machines feature servo controls for printing pressure and anilox ink transfer. By simply setting a few parameters, operators can easily achieve a high degree of accuracy without the extensive experience required to adjust the pressure manually.



Wang Haifeng, General Manager, Ekofa

"Ekofa aims at long-term market innovation. We hope that our strength in this area can be encapsulated and continued. Automation Studio from B&R is very suitable for our ideas."

Energy-efficient drive system

A printing machine should provide high quality, but needs to do so at minimal cost. Experienced plant operators know how vital the topic of energy consumption really is when it comes to long-term success. That's why Ekofa selected ACOPOSmulti servo drives with a common DC bus, which are able to regenerate braking energy back into the mains. The power factor of an ACOPOSmulti drive is close to 1 – an impressive advantage over other systems. Its power input range from 230 to 480 VAC ensures reliable operation, which is especially relevant in China's western regions where grid stability is an issue.

Reduced waste and increased yield

Roll changing, proofing and register control are processes that can easily produce waste. With its full servo mode, the new machine reduces waste through smart software design. The automatic mark locking function avoids the need to confirm mark position manually. It can achieve automatic confirmation with only a few internal parameter calculations in order to enter the re-

gister process quickly. It also improves efficiency by reducing the risk of deviation. Sets of process configuration parameters (roller size, pressure and temperature) can be stored in recipes, which operators can easily call in order to save time and reduce waste. Automatic roll changing helps implement continuous printing as well as ensuring printing quality.

Expert cooperation

Developing a printer this complex takes the expertise of a well-versed engineering team. "We were deeply impressed by the ability of B&R's team to quickly find cost-effective solutions to each challenge encountered," says Ekofa's general manager Wang Haifeng. The new machine achieves speeds up to 180 meters per minute and helps keep Ekofa at its leading position in the printing industry. End users are also satisfied with the reduced waste. "Having satisfied customers means we gain the benefit of long-term cooperation," notes Wang. "In the future, we will continue to develop machines to meet our customers' demands. It is our common vision." ↵



Beyond its impressive technical specifications, the ACOPOSmulti is a universal solution for any automation task where efficiency, ROI and high availability are important.



Automation Studio is the foundation for smart development. The platform integrates all tasks and objects and is essential to the efficient long-term development of customized machines. Automation Studio allows Ekofa to encapsulate and expand their expertise.