

## Fully Automated Brochure & Book Binding



Sigloch Maschinenbau offers special machines for binding brochures and books. This ranges from gathering machines, adhesive binding machines, endpapering machines, to bookback gluing and back-lining machines, drying conveyors, nippers and ribbon inserting machines. The flexible individual components are integrated in a high-performance system. Moeller technology helps the automated machines achieve short resetting times, ensure convenient operation and optimum operational reliability. >>>



The processing of small print runs with short setting times economically, safely and reliably – this is the principle by which Sigloch builds its standard compliant machines for the low and medium performance range. When designing complete book production lines, Sigloch uses CAD system planning to ensure optimum production and material flow logistics with the space available. With many years of experience in the development and manufacture of complete systems, Sigloch also offers modified machines or implements special requirements in terms of formats. Specialists at Sigloch Maschinenbau also

develop special connections and links for the optimum integration of third-party machines.

#### Efficient control technology

Two machine types illustrate the fully automated construction design: The ZTM 7043 gathering machines and the KB 4300 perfect binder. The ZTM 7043 gathers the folded signatures or individual sheets in up to 24 stations and passes them on to the binder via a link. A cascade control enables the machine to be filled or emptied automatically. The special features of the ZTM are the smooth removal of the product from the stacking magazine, the fast adjustment of the magazine to different formats, and also the adapted angle of the transport channel, as well as specially designed guide plates for low-friction transportation.

The 17-clamp KB 4300 perfect binder (4300 cycles/h) is used for producing glue or thread bound brochures with the stations back processing, gluing, rotation cover feeder and press. Two back processing stations prepare the block for back gluing with hot melt or PUR adhesives. The cover is fed by the rotary cover feeder. Here the integrated scoring station prepares the cover for optimum positioning on the book block. The press station then fixes the cover to the block. A second press station integrated at the side of the discharge unit is used for processing difficult cover materials. A belt discharge system finally transfers the products to a conveyor system for transporting to the downstream processing systems.

#### XC200 modular PLC and XVH300 touch panel

Both machines use a similar automation solution. A Moeller XC200 is networked with several XI/ON remote I/O modules. CANopen is used inside the machine for communicating with the field modules. The intelligent drives are also connected via the CANopen bus system. Ethernet is used for the connection between the PLC and the HMI unit, and also for networking the machines. Moeller XVH300 and XV400 touch panels are used for the HMI.

The Easy PageMachine (EPAM) visualization tool is specially designed for graphical user guidance with touch systems, and

## THE COMPANY

The Sigloch Group, based in Blaufelden, has developed from a traditional book binder in 1883 into today's ultra-modern industrial company with different subsidiaries. Around 600 employees work in the business fields Bookbinders/ Edition, Distribution and Engineering. Sigloch has extensive experience in highly automated production systems for manufacturing brochures and for hardbound books, as well as in the requirements of cascaded production lines. They are designed to ensure optimum availability, reliability and service life. From the mechanical engineering workshop arose one of the leading machine builders for bookbinding machines with its own developed and future-oriented technologies that are used worldwide. The range of services also includes customer training seminars for machine operators. The Sigloch bookbinding centre also handles special formats such as atlases and multi-volume encyclopedias, such as the high quality Brockhaus edition.





enables visualization parameters to be set without any extensive programming. The integrated RemoteControl client/server functionality can be used for mobile applications, particularly for the testing and commissioning of large-scale machines. This compresses the actual screen content of the field touch display and transfers it with a minimum data requirement via wireless LAN to the remote client. In this way, each application created with EPAM can be automatically "mobilised" without any additional engineering required. The RemoteControl client can be run on different standard devices based on Windows Pocket PC 2003 and WindowsCE, and so a PDA can be used, for example, as a mobile visualization device. The wireless communication from the touch panel to the PDA is implemented via a standard WLAN access point. Integrated password protection prevents unauthorised access to the system.

The XC200 not only stands out in terms of classical PLC criteria such as memory and processing speed (512K program, 256K data) and processing speed. The multi-tasking operating system also makes optimum use of CPU resources. The XC-CPU-201-XV already comes with eight digital inputs and six digital outputs for connecting to the distributed I/O. Two of the inputs can be configured either as 50 kHz counters, as two interrupt inputs and one as an incremental input, as required for positioning tasks. The PLC can be expanded locally with up to 15 XIOC modules. All connections can be implemented via pluggable screw and spring-loaded terminals. The XC200 is also fitted with a slot for MultiMedia memory cards (MMC). These can store programs or recipe data which can be read into the PLC. Other features include the integrated battery-backed real-time clock and memory for up to 32K retentive data. A freely programmable RS232 interface, a CANopen fieldbus master and an Ethernet interface are provided onboard

for connecting distributed I/O. The Ethernet connection is also used for programming access, effective networking between the PLCs and for visualization. It also supports remote programming and diagnostics. The OPC server also simplifies the connection with standard OPC client applications. Furthermore, all XC-CPU-201...-XV devices come with an integrated web server. This allows user-defined web pages to be loaded without the need for any additional tools. These pages are simply created beforehand by the user in the easy Soft CoDeSys software. Any web browser can thus be used for displaying data from the PLC for diagnostics tasks, without the need for any special visualization tool.

Moeller consistently developed the touch panels of the XV series to ensure optimum cost efficiency in machine building and industrial automation: XV panels are low-budget systems that are available with infra-red or resistive touch technology. They are used as HMIs for data management and for visualization. The touch panels come with integrated CANopen, Ethernet (10/100 MBit) and RS232 interfaces onboard for communication. The systems are provided with a RISC processor (32-bit) with a sufficiently sized memory of 64 MB. The removable CompactFlash offers a high level of flexibility: CompactFlash cards enable users to adapt the memory size for data, such as project or recipe data, to the requirements at hand. Its compact design and small mounting depth also allow the touch panels to be integrated in machines where space is at a premium. The touch panels (IP 65 front protection) have been developed for industrial use in international markets and also come with CE, UL/c-UL approvals, as well as explosion protection for Zone 22, category 3 D.





## CONCLUSION

Otmar Weber, responsible for electrical engineering of the gathering machine and perfect binder at Sigloch, explains: "We also use Moeller technology for our newly developed machines. With the appropriate hardware and software, our customers are investing in products with the highest operating and safety standards. No wonder, since our machines often have to be kept running continuously for 10 to 15 years. In future we intend to initiate production in the machines and lines order-based from the control room via a data server. Our machine building and the automation from Moeller are already designed for this future option." Markus Hesselmeier, head of electrical design at Sigloch Maschinenbau, is particularly proud of the control cabinets that have been reduced in size: "Thanks to our wiring with Moeller components, they can be considerably reduced compared to the previous volume." Contact: [www.sigloch.de](http://www.sigloch.de)