



«Small, Precise, and Flexible Above All.»

Covatec AG, headquartered in Biel, Switzerland, is something of a phenomenon. What Managing Director Thomas Villard and his small team achieve in the field of precision machinery deserves great respect. Maintaining the high quality of precision machines over many years requires extensive experience, highly qualified personnel, and a powerful yet flexible automation system such as the one provided by SIGMATEK. SIGMATEK stands out not only through its technological solutions but also as a reliable partner throughout the entire machine lifecycle, from design and commissioning to long-term support.

Andreas Leu

Constant reinvention has been a defining principle throughout Covatec AG's history since its founding in 1974. The company was established by Messrs. Weiss and Albert. In 2008, they sold Covatec to Meyco Holding. In 2009, the holding company approached Thomas Villard, who had previously spent 19 years with the Swatch Group, to lead

Covatec AG. Reflecting on that period, Villard recalls: "The beginning was quite challenging. We focused on our know-how and our strengths. Our future credo for precision machinery became: small and precise above all. There were already plenty of suppliers on the market manufacturing larger parts and components."

Diversification: The Key to Success

Another important component of Covatec's success, both then and now, has been diversification. While the company continues to regard the Swiss watch industry as an important market, it has also actively sought opportunities in new sectors.

«SIGMATEK's automation system is ideally suited to our requirements thanks to its high performance, flexibility, and modularity. In addition, the level of support and delivery reliability is exemplary.»

Thomas Villard, Covatec SA



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Thomas Villard, CEO of Covatec AG, explains: "We supplied companies in electronics manufacturing, aerospace, and the automotive industry. Most of our customers were based in Germany, including Siemens, Gigaset, AEG, Roche, and others. We mainly built machines for soldering and welding applications. As production shifted following EU eastern expansion, some of these markets declined. As a result, we further specialized in technologies such as press-fit assembly and micro-welding."

Swiss Quality Helps, But It Is Not the Only Factor

Naturally, being a Swiss company is an advantage, particularly in the field of precision automation. However, that alone does not explain Covatec's success or the confidence customers place in the company's expertise.

With a workforce possessing extensive know-how, Covatec develops and designs machines, creates electrical schematics, performs assembly, and develops software in-house. Commissioning and on-site customer training are also included in the scope of services. Only the manufacturing of individual components is outsourced.

"We know exactly what we are capable of producing and what we are not," says Thomas Villard. "We have four machine platform sizes that we adapt according to the application. If one of these platforms cannot cover at least 80 percent of a custo-

mer's requirements, we do not accept the order. We cannot afford that risk."

According to Villard, several factors influence a customer's decision to purchase a machine from Covatec:

"We do not just sell machines; we also sell know-how. That is extremely important. Our machines are easy to operate, offer short changeover times, and feature intuitive controls. The control system plays a crucial role in this. It is essential for us that our machines do not require engineers to operate them. We know customers who can mechanically retool our Speed Riveter Quick Change assembly machine for a new part in less than five minutes." The same level of convenience applies to the assembly machine's user interface during changeovers. Once a part has been saved as a parameter set, it can be loaded into the control system via a Windows-based interface with minimal effort.

Villard demonstrates this directly on the machine: "I simply select the desired part from the parameter list. With a few mouse clicks, the part is automatically loaded. In automatic mode, I am asked whether I want to apply this parameter set. After confirming, the data is transferred to the controller. It could hardly be any easier. To create a new part, the customer can simply copy an existing parameter set and adjust the parameters."

The Automation System Must Meet Customer Requirements

The requirements placed on Covatec's machine control systems can be summarized in just a few words: flexibility, modularity, and high performance. Since each machine is tailored precisely to customer requirements, the number of digital and analog inputs and outputs, as well as the quantity and type of drives, such as stepper motors or servo drives, varies from machine to machine. In addition, controller communication with higher-level systems via data interfaces is often required, and external drive or measurement systems are frequently integrated through fieldbus technologies such as EtherCAT. Solutions for quality assurance are also part of the offering.

To meet such a diverse range of requirements, SIGMATEK's automation platform is ideally suited. Thanks to its wide range of expansion modules and scalable architecture, virtually any Covatec requirement can be accommodated. Another major advantage is the LASAL engineering suite. Stephan Mack, Sales Engineer at SIGMATEK, understands the programming requirements of Covatec machines: "With object-oriented programming, large portions of existing software can be reused in new machines. This significantly reduces software development time. User interfaces can also be transferred using LASAL VISU Designer and quickly adapted to customer-specific requirements."

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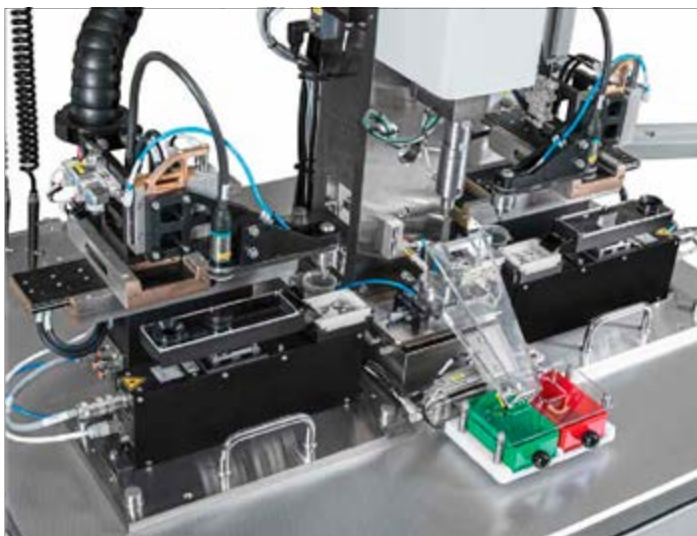
Due to their high flexibility, scalability, and comprehensive portfolio of expansion modules, including safety modules, SIGMATEK control systems are ideally suited for customized applications such as those developed by Covatec.

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Thomas Villard demonstrates the PE20 High Precision Servo Press to Stephan Mack. It is the first machine equipped with SIGMATEK's automation solution.

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The user-friendly interface allows process data for new parts to be parameterized and stored quickly and efficiently.



SIGMATEK's CP 313 CPU module is ideally suited for applications such as those developed by Covatec. It features a powerful dual-core EDGE2 processor and is well suited for control, regulation, and motion applications. Multiple connectivity options, including CAN, USB, Ethernet, and VARAN bus, enable use in a wide range of applications. In addition, an EtherCAT interface is integrated directly into the module.

Beyond that, LASAL provides a fully integrated development environment combining control, visualization, and motion control functions. This enables consistent engineering, reduces interface complexity, and significantly increases engineering efficiency. Changes can be implemented quickly, and existing software modules can be reused with ease, a clear advantage for highly customized machine concepts such as those developed by Covatec.

A particular strength is SIGMATEK's S-DIAS control system. Its compact design, high integration density, and modular expandability make it ideal for machines where space, flexibility, and performance are critical. The ability to place decentralized I/O modules directly within the machine additionally reduces wiring effort while improving system transparency.

Exemplary Teamwork

Thomas Villard particularly appreciates the way SIGMATEK understands and responds to customer needs. "SIGMATEK's exceptional delivery reliability, especially during the COVID-19



The Speed Riveter Quick Change assembly machine enables Covatec customers to easily parameterize process data and achieve extremely short changeover times.

crisis, was the decisive factor that led us to switch automation platforms. For us and our customers, on-time delivery is essential. During the transition, our programmer received exemplary support from SIGMATEK's application engineers. Thanks to the excellent product documentation, we were able to design the hardware configuration largely on our own. It is common for our specialists to require support during drive sizing and initial commissioning phases. For our first machine using a SIGMATEK control system, one of SIGMATEK's application engineers provided on-site practical training and support throughout the commissioning process."

Another important success factor is the local support provided by SIGMATEK Switzerland. Customer proximity, short response times, and hands-on assistance enable projects to be implemented efficiently and challenges to be resolved quickly. For smaller teams such as

Covatec's, direct access to experienced application engineers is particularly valuable. The combination of powerful technology, integrated engineering tools, and strong local support makes SIGMATEK a dependable automation partner for demanding machine-building projects. The next major project is already underway. It involves a machine measuring two by three meters for the production of sensor components. The system will incorporate 26 axes, two servo presses, and five feeding units. "Interestingly," says Thomas Villard with a smile, "the customer found us on the Internet. Even though they are located in our region, they had never heard of us before." With that, Covatec and SIGMATEK can look forward to many more exciting projects together in the years ahead.

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