

Customer magazine of Kunststoff Schwanden AG

Competence

Forward-looking
expansion to China

Automotive

Hybrid components for
the automotive industry

Industry

Water metering with
the flowmeter



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IMPACT – Kunststoff Schwanden AG continues to expand

Dear readers

Anyone who wants to be a developer of plastic solutions these days has to be able to operate internationally. In order to meet this customer need, Kunststoff Schwanden AG has decided to enter into a joint venture with an experienced partner in the Chinese city of Tianjin. To do this, we will bring the established processes from Switzerland to China in order to be able to produce in the future where our customers are active.

The internationalization strategy also has an impact on our headquarters in Switzerland, as it places new demands on our ERP system, for example. You will learn how we handle it in the latest issue of our magazine. We also introduce our Sales Support Team – because it is our employees who make the Kunststoff Schwanden AG successful.

We look forward to working with you globally.

The management of Kunststoff Schwanden AG



Forward-looking expansion to China

The past few years have clearly shown that our world is becoming increasingly interconnected and the economy increasingly global. This results in many advances and opportunities, from which Kunststoff Schwanden AG also wants to benefit. That is why we are expanding into China, enabling forward-looking projects.

Our larger customers have a clear need for local production and delivery, as well as local contacts in Asia. To meet this need already this year, Kunststoff Schwanden AG has decided on a joint venture with an experienced injection molding company. The company produces perfect plastic solutions for demanding customers. Thanks to the joint venture, we will be able to directly supply the Asian region in the future, and with guaranteed quality, just as customers are used to from Kunststoff Schwanden AG.

The new plant in Tianjin

The city of Tianjin is an important port city, an industrial center, transportation and cultural hub in the Greater Beijing region with a high standard of education. Tianjin is thus an ideal location for our factory, as the city can be reached in 2.5 hours from the current Beijing Airport and 1 hour from the future Beijing Daxing Airport south of Beijing.

In addition to administration, injection molding and assembly, the company also has its own toolmaking facility in the approximately 8,000m² plant, which enables additional flexibility in production. The well-run operation allows us to start production of projects this year.

Know-how transfer

With employees from Kunststoff Schwanden AG in various fields, our Swiss know-how is quickly and purposefully established in China. Technologies that are currently missing in China will also be available at our Chinese plant by the end of 2019. Quality is our highest priority.

Kunststoff Schwanden AG expansion plan

Following the expansion of Kunststoff Schwanden AG by a BRC plant in Switzerland, the Tianjin plant is now the first production facility abroad. The plant thus lays the foundation for the successful expansion strategy. In a further step, a suitable factory is being looked for in Mexico or the USA so that this market can also be locally supplied in the future. Among other things, our customers benefit from shorter delivery times and can nevertheless rely on cooperation with an established partner.



↑ INSIGHT IN THE PLANT TIANJIN

← THRIVING METROPOLIS
Port city Tianjin

Swiss Processes to be Implemented in China



Kunststoff Schwanden AG expands to China and faces the current challenges. Hermann Hauser, CEO of Kunststoff Schwanden AG, is convinced that the combination of Swiss and Chinese strengths is the key to long-term success.

INTERVIEW

Kunststoff Schwanden AG has decided to expand to Asia. Can you explain the reasons for this?

HERMANN HAUSER (HH): First of all, it is important to take customer requirements into account. Specifically, this means that we have to comply with the same-part strategy in which components or assemblies are developed in Europe and then produced in Europe, Asia and North America. For this reason, as an automotive supplier in Europe, you will hardly get more orders if you cannot produce in the Asian market. After all, it is easier and more efficient for customers to have just one partner for an order, regardless of whether the projects are implemented in Asia or Europe. We now meet this need of our customers.

Why is China especially interesting as a location?

(HH): Since our premium customers are based in China, it was clear to us that we would follow them there. In addition, China has historically been the fastest growing market in the automotive industry, outperforming Europe and North America in vehicle production. As a next step, however, we are already planning to expand Kunststoff Schwanden AG to North America. We are looking for a suitable location and possibly for a suitable partner there.

Why did you choose a joint venture?

(HH): On the one hand we had the option to build a new plant or to benefit from the network of our sister company Novem GmbH and to enter into a joint venture with the Jingmei Weiye Group (JMW). We preferred this variant to the Greenfield version, especially as JMW has a long tradition as a toolmaker. The chrome plating of parts that JMW offers requires very good tools. This is interesting for us because our high-tech tools can also be optimally maintained in China, which is crucial for optimally functioning production. In addition, JMW already produces plastic parts for the automotive industry. With us as an experienced and established partner, it will again have the opportunity to reach major premium customers. The joint venture is thus a win-win situation for all concerned.

China is often associated with the predicate "cheap and poor quality". Do you not see a danger for the perception of Kunststoff Schwanden AG and a contradiction to the production location Switzerland?

(HH): China does not have the stamp of "cheap" or "bad" in the automotive sector or industry. All our competitors are in China. Our factory is located in Tianjin, a prosperous suburb of Beijing. Our strategy is clear: we will implement all the processes we have in Switzerland in China as well: the same machines, the same hedging concepts, the same assembly systems. The only difference could be that we use people for individual shipments of goods between individual stations, which makes the robots here in Switzerland. However,

the value-adding measures for the production of the final product will be the same. Therefore, it is not to be expected that the quality will be worse.

To what extent can Swiss employees benefit from the new plant in China?

(HH): We receive orders through the plant in China which we would not get otherwise. The times are over when an automotive supplier with our clientele was only able to produce for Europe. If you do not produce in Asia, you will no longer receive orders for Europe. China is also beneficial for the personal development of the employees. The opportunity to get to know a new country, a new culture, major cities such as Beijing or Tianjin, greatly expands the horizons.

Of course, certain processes will change as a result of the expansion, as well as English being increasingly spoken at Kunststoff Schwanden AG, as it is now necessary to communicate with China. That's why we offer free English language courses to people in contact with China.

What challenges do you see for the future, especially in terms of continuing globalization?

(HH): Our biggest challenge is to find the right professionals globally and to tie them to the company.

This interview was conducted by Claudia Züger, Marketing Manager

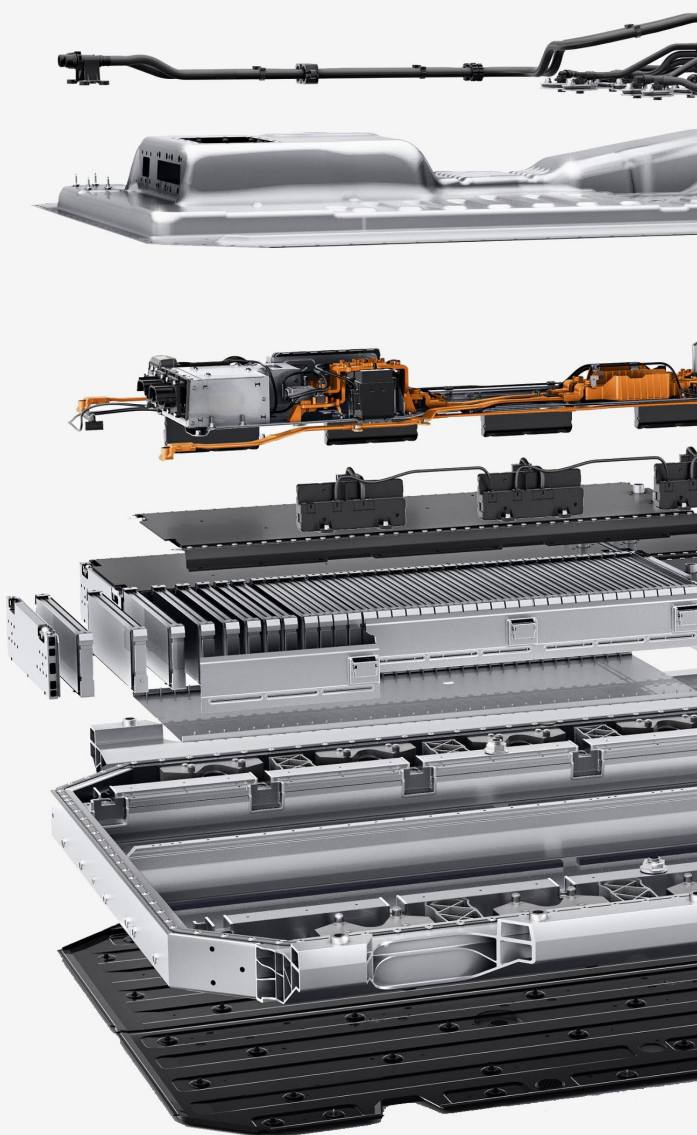
The future is electric

Often, the opinion prevails that you can drive with an electric car only a short distance before the next charging station must be visited. But modern electric cars do not have to mean abandonment and restrictions. This is ensured by one component in particular: the battery of the electric powertrain.

Today, electric cars often use lithium-ion batteries. Plastic components are very popular in modular lithium-ion batteries because plastic has many important advantages. Above all, plastic has excellent insulation properties. These are needed to shield the battery's sensitive energizing cube block from the battery case with insulation plates and high-voltage (HV) covers. For reasons of stability, this housing is made of light metal die cast, which, like all metals, is highly conductive.

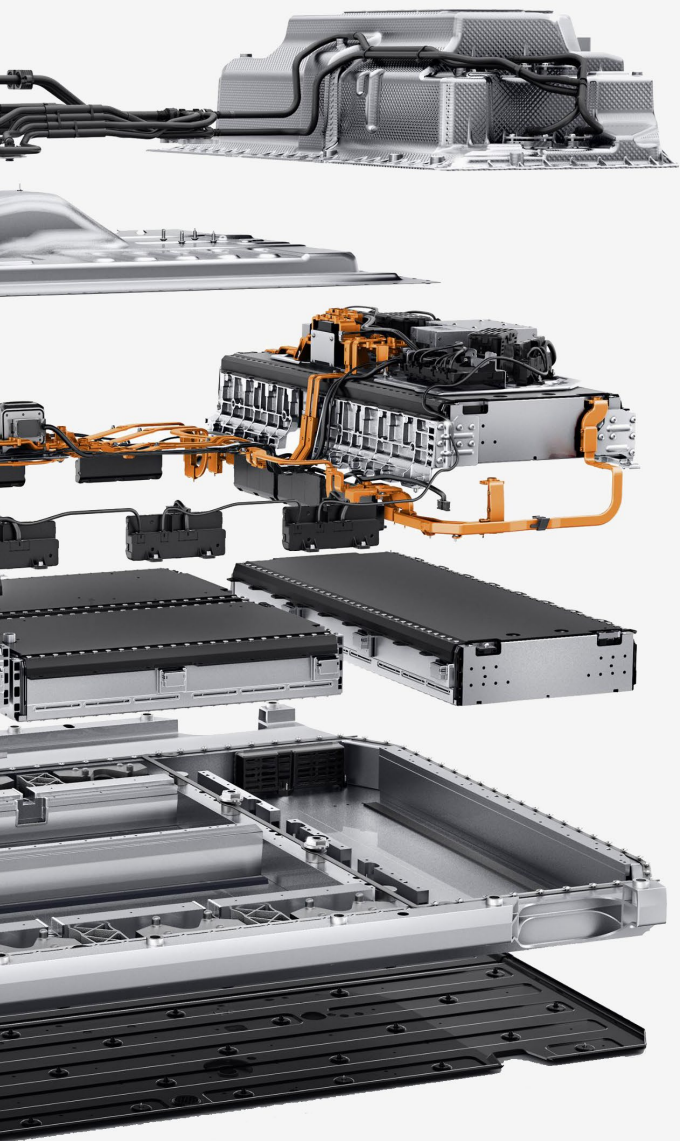
Flexible design as a solution for small installation spaces

The almost unlimited shaping possibilities of plastic injection-molded parts are a further advantage for the component developer, so that he can realize his desired geometry in the always very tight space. In order to realize subsequent mounting options for other electronic components, sometimes metal components such as sleeves and threaded inserts are inserted in fully automated processes precisely in the injection molding tools, to then encapsulate them with plastic to the final finished part.



→ BATTERY CONSTRUCTION OF THE ELECTRIC DRIVETRAIN

High tech in the smallest scale



Weight savings thanks to plastic

Vehicle batteries increase to a considerable extent the total weight of the vehicle. Therefore, another advantage of plastic is very welcome: its low weight. This has other application potential in this area, as one of the vehicle manufacturers' key goals is to further reduce the weight of the batteries.

Not insignificant in a battery environment are of course the corrosion requirements of all components that are directly met by the use of plastic, since there are no corrosion problems with plastic. Finally, specific safety requirements with regard to fire safety must also be guaranteed. This can be fulfilled with special plastic granulates and additives.

Kunststoff Schwanden AG as a flexible solution provider

Kunststoff Schwanden AG produces several plastic solutions with and without metal inserts for electric vehicle batteries. Further projects for the international e-market are already being planned.



"With our intelligent solutions and fresh ideas, we can shape the future of mobility with our customers, driving progress forward."

Saimen Ackermann, Head of R&D

Automotive

Slide rails: A hybrid component ensures the perfect symbiosis



Hybrid components are a specialty in plastic injection molding due to their complexity. Properly used, they generate great benefits - such as slide rails produced with our innovative manufacturing process.

Slide rails are required in internal combustion engines to guide the timing chain in the control housing accurately and thereby transmit the rotational movement of the crankshaft to the camshaft. Throughout the life of the engine, the drive chain will glide over the slide rails. This places the highest demands on the material used because the rails are subject to very high mechanical stresses due to the high engine speeds and the enormous temperature loads. The components thus have an increased abrasion resistance and must also be resistant to the various glucol and benzene compounds in the engine compartment. Plastic alone could hardly withstand these heavy loads. Therefore, Kunststoff Schwanden AG uses in certain variants on plastic-metal sheathing of slide rails, a so-called hybrid component.

Combine strengths

In a hybrid component, the positive properties of the steel and the plastic are optimally paired. So this hybrid component has the stability and strength of steel and in addition the good sliding property of plastic. The lower friction protects the drive chain, which guarantees long-term, reliable operation and saves costs. The hybrid component is also interesting because the use of plastic can save a lot of weight. In the automotive industry, less weight means less fuel consumption and thus lower CO₂ emissions. Not only the end user benefits from financial savings, but also the environment.

Material properties as a challenge in production

In the production of a hybrid component, the greatest challenges are the tension differences that result from the different expansion coefficients of the materials used, in this case steel and plastic. Because tensions can always lead to cracking, which must be avoided during production. So that these component loads do not occur, Kunststoff Schwanden AG makes use of an adequate constructional design and an innovative manufacturing process, in which the metal parts are pre-assembled in a fully automatic process and then afterwards over-molded. This creates a perfect symbiosis of steel and plastic: the hybrid component.

Water metering with the flowmeter

In many households you can find them: tea and coffee machines or appliances for the preparation of liquid baby food. They all have something in common: the flowmeter. Because wherever liquids have to be precisely and specifically metered, the flowmeter is used. Thanks to this, several filling contents can be programmed precisely on one machine.

This can be ensured by a Hall sensor and two small magnets. By pressing the control key, the pump is started and a vacuum is created, which allows the water to flow through the flowmeter. The flow of water inside the flowmeter activates an impeller with magnets attached, and the Hall sensor counts the number of revolutions until the desired amount of water in the cup is reached.

Kunststoff Schwanden AG co-developed the flowmeter and produces several versions of it, adapted to the different requirements of the components. Also, Kunststoff Schwanden AG has developed a method of producing dense hard/hard plastic connections of housing and housing covers without a secondary sealing element. The previously existing O-ring can be completely substituted.

Precision in the thousandths of a millimeter range

This can only be achieved by very high component precision in injection molding. This means that the housing and the housing cover fit together perfectly and the radial seal and surface seal will be guaranteed at all times.

The fully automatic assembly takes place via a cam-controlled assembly testing system. Since the fine hard components can easily break during assembly, each individual assembly step is conducted in a gentle and homogeneous flow.

All functions such as leak tightness, movement and magnetism are then checked and documented directly inline. Subsequently, the flawless components are packed fully automatically into automated blisters.

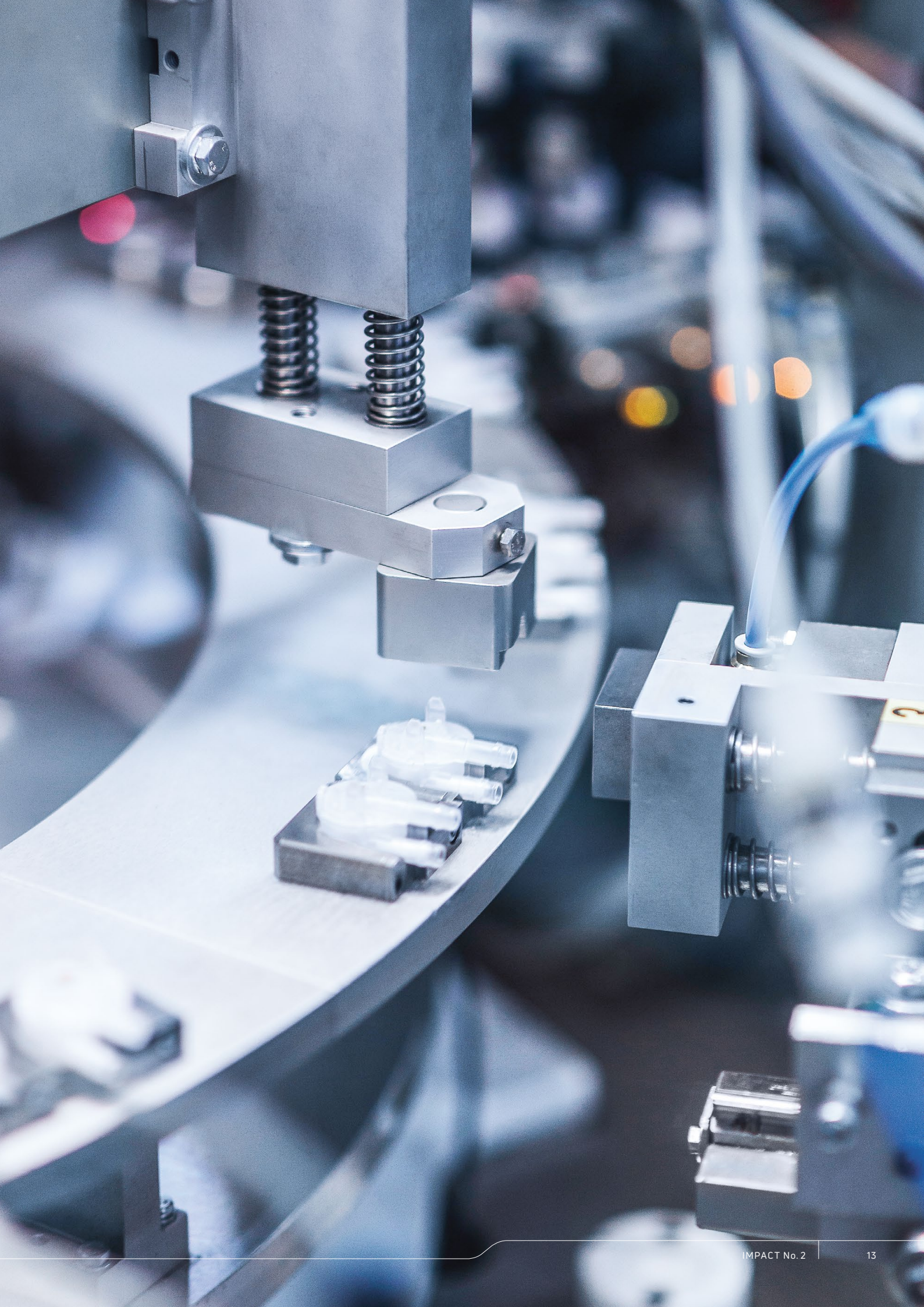
This high-precision assembly is untouched, sprayed, assembled, tested and packed by humans. Only such fully automatic processing guarantees compliance with the high hygiene requirements that are placed on the flow meter.

Since 2018, the Kunststoff Schwanden AG plant in Näfels (CH) has been completely BRC-certified. This allows us to produce packaging for the food industry to the highest standards of hygiene.



→ HYGIENE GUARANTEE

Fully automated production

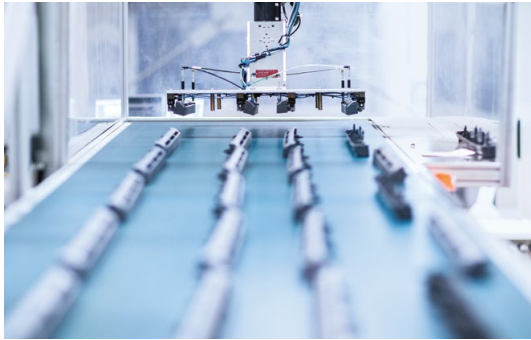


Industry

Plastic solutions for household appliances with superior design and functional requirements



The door of a baking oven is no longer just a functional element, but is a part of the interior design with the ever-expanding eat-in kitchen. This is also the case with our products, which we produce for customers in the household industry. We use the advantages of plastic, such as its flexibility, in order to implement contemporary design requirements in a customer-specific way.



In addition to the externally visible panels, we also produce the panels you see when you open a device. Using the example of the door of the oven combi unit, the various requirements for injection molding components can be explained very well. When opening the door, the high-quality trim with stainless steel insert becomes visible. The dark blue highlighted plastic components include on the one hand the stainless steel insert. On the other hand, the integrated click-lock system allows removal of the entire inner panel to clean the inner pane. Design and function are therefore in harmony.

Heat resistance as a challenge

The device frame, shown as light blue in the picture, must be very heat resistant. A pyrolysis oven cleans itself through a special program, the temperature in the interior of the oven heats up to 500 degrees Celsius. In the end, the dirt remains only ash, which can be easily wiped out of the oven.

To withstand the heat of the door and the frame, a high-performance special compound material is needed, which brings some challenges in processing. With extremely short shot times and high processing temperatures, the creation of such a plastic solution is quite complicated.

By substituting expensive stainless steel, this innovative process has reduced both the manufacturing costs of our customers and the weight.

↑ PRODUCTION OF A TOP PANEL

Plastic solutions for the household appliance industry

← OVEN COMBI DEVICE

Design & functionality in one

Improved partner integration thanks to new ERP system

Globally operating companies rely on reliable Enterprise Resource Planning, or ERP system for short. As part of the internationalization strategy of Kunststoff Schwanden AG, various products were analyzed in a two-year evaluation process. The new system will be live in 2020, offering customers and partners many benefits, such as improved workflows and simplified product data management.

The evaluation quickly showed that the magic word is "integration". Because not only have the requirements of the customer regarding traceability increased in recent years, there are also new requirements for the ERP system internally such as in the areas of accounting, project management and documentation. For this, existing systems must be integrated into the new comprehensive ERP system by consolidating the peripheral systems.

Networked data ensures process optimization

Thanks to better networked data, it is now possible to improve access to information and transparency. Consistent batch tracing for raw materials, semi-finished and finished products is just as important as the consistent documentation of product manufacturing across the various workstations, from tool production to the delivery of finished parts and assemblies. Along this value chain there are many points of contact where data has to be exchanged, for example with suppliers and customers. The new ERP system offers better connectivity options, for example through additional EDI formats for customers and now also for suppliers. Portal access is planned for partners, through which permits or data exchange of documents can be made, along with standards such as e-invoicing or self-billing procedures.

The improved documentation also affects product quality. Errors can be traced back to their source. In addition, it is also planned to use more mobile devices for data acquisition in the sense of Industry 4.0 and to integrate the machines and systems even more intensely.

Multi-stage implementation process

For the IT department of Kunststoff Schwanden AG, the various requirements of the individual areas must be met with the new system. Following the completed evaluation phase and contract negotiations, implementation was planned last year. Currently the first trainings took place, of course with test data. By the end of 2019, the specific business processes will be designed and mapped to the application. Interfaces, both internally and to partners, must be adapted and tested. This includes a simulated live operation. After the final data migration and final tests, the new IFS ERP system will be put into live operation in 2020.



"With the new ERP system, we will improve internal processes, guided by workflows and approval procedures. In addition, we increase efficiency and transparency for ourselves and our partners."

Peter Ackermann, Head of IT



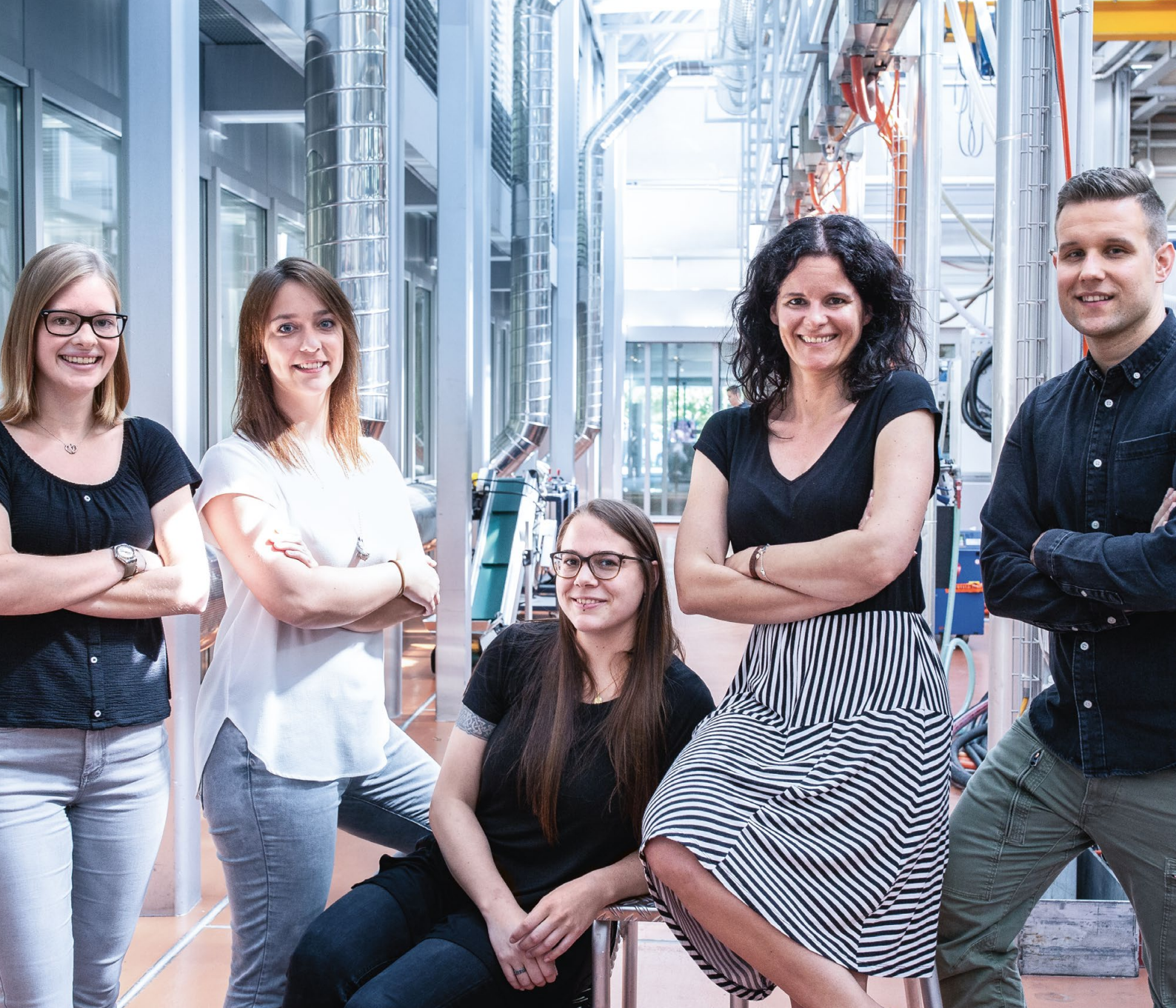
Reliability as top priority



The Sales Support Team at Kunststoff Schwanden AG supports the Key Account Managers in all areas of Industry, Automotive and Packaging. Reliability is essential in this job because good customer service is the beginning of every successful business relationship.

The demands of Kunststoff Schwanden AG's customers are very different. To meet these requirements, Kunststoff Schwanden AG has divided its sales support team into different areas, optimally pooling their expertise. The tasks and work processes differ significantly, depending on the industry and the customer. Bianca Kamm from the Automotive sector comments: "For example, when comparing quotations, it is noticeable that in my area a lot is handled via portals and standardized forms, while my colleagues in the Industry/Packaging department write written offers and send them by email to the respective customer. There is no such thing as typical day-to-day work in sales support, as Rahel Ryser emphasizes. But that is exactly what is exciting for the team members in their work.

The diversity that the customers express in their claims is reflected in the team. The different work experiences, age groups, interests and hobbies of the team members make the work exciting, and the regular exchange makes it clear that the team, despite all the differences, harmonizes well with each other and one learns from the other.



Mr. Lefek, what was your motivation for applying for the position as Sales Support at Kunststoff Schwanden AG?

OSKAR LEFEK: On the one hand, the triggering factors were the strong focus on the automotive industry and, on the other hand, the targeted internationalization strategy of Kunststoff Schwanden AG. I have been able to identify with cars and the economy since my youth and appreciate the connection between the two areas as well as the great room for maneuvering.

Ms. Landolt, what do you like most about your job?

SALOME LANDOLT: My work is exciting and varied and I learn something every day. I especially like the appreciation and gratitude that I receive for completed work from my colleagues and supervisors.

Ms. Rhyner, you have been working at Kunststoff Schwanden AG for over 20 years. What do you like most about your employer?

CHRISTINE RHYNER: After my apprenticeship as a businesswoman, which I was already able to complete at Kunststoff Schwanden AG, I was away for a year and then came back as assistant to the sales manager. Since I wanted to develop, I switched to internal planning and later, when I first became a mother, I was able to start part-time in Sales Support. I think it is great that Kunststoff Schwanden AG gives mothers the chance to return to work. In addition, it makes me proud when I discover our products in everyday things such as our coffee machine.



Kunststoff
Schwanden

Innovative
Plastic
Solutions

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