



Case Study

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Glück auf – Good luck!

A private brewery in the Ore Mountains combines a centuries-old brewing tradition with the courage to create an innovative beer value chain with systematic automation.

Small but excellent – that’s the motto of the Christian Fiedler private brewery from the Saxon village of Oberscheibe. With 18 employees, the family business is very successful in producing premium beers according to the time-honored art of German brewing. A KUKA robot makes this work easier.

“The wise man is ahead of his times. The smart man walks with them. The cunning man exploits them. The fool opposes them.” The words “Saying of the Week” are positioned above this bit of wisdom wrapped in transparent film at the entrance to the Christian Fiedler private brewery. Yet here in the tranquil village of Oberscheibe in the Ore Mountains in Saxony, time seems to have stood still. The brewery, surrounded by nature, resides behind walls from two centuries ago. The location would be utterly secluded if it were not for the 101 German federal highway connecting Berlin to the city of Aue and if not for this small, yet bustling Fiedler family brewery.

Christian Fiedler, 63, is the senior boss. An old-line master brewer who finds that a top beer brewed the traditional German way has everything: strong local ties, honest, traditional craftsmanship and the support of state-of-the-art technology to meet the highest quality expectations. A small excavator is currently parked at the entrance to the courtyard. The paving at the entrance to the brewery tavern needs to be renewed. “There’s always something that needs doing,” says Christian Fiedler. “But not just here. That over there is our latest gem,” he says, pointing to the robot cell at the entrance to the filling system. A 5-axis KUKA KR 180 PA robot from the QUANTEC series uses its Fiedler-green arms to load and unload entire layers of beer crates, with both full and empty bottles, in the areas for



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incoming and outgoing goods. “It not only provides us with a great deal of relief in physically demanding work, but at the same time gives us new opportunities to put our skilled workers to better and less exhausting use in other areas.” In times of increasing labor shortages in the brewing industry, he notes, this cannot be valued highly enough. “Glück auf!” – meaning “good luck” – is what they say here in the old miner tradition. “Luck belongs to the diligent,” states Christian Fiedler confidently.

On course for automation

In the brewing sector, as in the beverage industry in general, keeping up with the times always means automation. This is the specialty of Till Beyer and Beyer Maschinenbau GmbH from Roßwein – which, like Fiedler, is a family business and has roots that go back to 1862. Palletizing, packaging and conveyor equipment as well as complete systems with a focus on beverage technology and the food sector are built in-house and delivered, commissioned, and serviced as custom-fit solutions (if necessary also with integrated robotics).

“We held the initial talks with Fiedler about the automated palletizing of bottles back in 2005,” recalls Till Beyer. He notes, however, that the company then had other priorities and put the investment in the robot cell on hold. “That’s just how small and medium-sized enterprises are. We as machine builders and integrators simply have to be a bit patient there.” In 2018, the day finally came: the physically challenging palletizing and depalletizing at Fiedler was to be taken over by the robot from then on.

The technology for this is provided by a 5-axis KUKA KR QUANTEC PA robot – a multi-talent of modular design. It can move payloads of up to 180 kilograms. At Fiedler, the robot uses its gripper to pick up as many as four beer crates at a time. It lifts the incoming empties from the pallet onto the conveyor and takes the crates coming from the filling line off the roller conveyor, placing them directly onto the pallet. There is space for 800 bottles in



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40 crates on a europallet. These pallets are transported from the robot cell by forklift truck to the outgoing warehouse or directly onto the truck.

Investing in the future

Automation solutions are the personal passion of Thomas Fiedler, the son of Christian Fiedler. The master brewer represents the fifth generation and joined the family business in 1999. Since then, he has been particularly involved in all technical matters. “We know that we have to continuously invest to stay at the cutting edge of technology,” says Thomas Fiedler. For him, this means that, as with the use of robots, he always wants to fully understand the desired solution and then implement it consistently and as a complete package. “Half measures are out of the question for me.” He also notes that many SMEs in his industry are still afraid of automation. “That does not have to be the case at all. Automation is fun.” He stresses that with Till Beyer he found a very good sparring partner who knew exactly what was important in the beverage industry – and who was also able to understand the relevant local conditions and spatial constraints.

Optimizing available capacities

And this was precisely what was needed to a particular extent in view of the historic walls of the Fiedler Brewery. “We are at our limit in terms of the spatial capacity of our site. So expansions here are only possible through optimization of the available space,” says Thomas Fiedler.

And this meant that integrating the robot cell also required extensive custom work. “We had just 4x5 meters available for the palletizing station – and we needed further space for the passage to the filling station in order to also move europallets past the robot enclosure here,” states the master brewer in describing the challenging conditions. “We got it done,” he states happily.

Robotics at the brewery is not rocket science



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The brewers, however, are not just concerned with the physical integration of the system. It must also be as easy as possible to digitally integrate the automation technology into the running processes. “The software provides the basis for this,” notes Till Beyer. As the interface between the robot and the machine controller, KUKA.PLC mxAutomation enables simple start-up, programming and diagnosis of every KUKA robot via the PLC – and this in a user-friendly manner and even without special robot programming knowledge. Nearly all functions of the robot controllers can be called via PLC. KUKA.PLC mxAutomation also offers robot libraries for all known PLC controllers on the market.

Father and son are convinced of the private brewery’s course towards automation. “It lays the groundwork for the consistently high quality of our premium beers. There is more of a future in these than in the ruinous price war that has unfortunately gripped many sectors of the beer market,” Thomas Fiedler affirms. And his father, Christian, also enjoys the innovations involved in the brewing process: “There are bangs and hisses in every corner when I come into the brewery early in the morning,” he says with a wink. “From the automated brewhouse to the automated filling system and on to the palletizing robot – everything contributes to ensuring that the quality of our beers is always reliable and consistently high. This is what sets us apart and ultimately also makes the difference in terms of the competition. Our beer simply must taste good. Full stop. We make no compromises on that.”

At the end of 2022, Christian Fiedler wants to put the brewery’s business entirely in the hands of his son, Thomas. He is highly motivated. “The next thing we’re going to do is modernize the keg filling.” Demand is high, he says. And it is his aim for this situation to remain unchanged. After all, his daughter Vanessa is just starting her training as a master brewer – so the sixth generation is already in the starting blocks. So it seems that the history of Fiedler – a company tucked in the Ore Mountains and steeped in tradition – is far from finished. Well, then: Glück auf – Good luck!



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Captions

Fiedler_Export 1-3108.jpg

The entire bottle handling process with full and empty bottles takes place automatically in the robot cell. Much to the delight of the brewery family, the 5-axis KUKA KR QUANTEC PA robot was painted in the colors of the Fiedler brewery.

Fiedler_Export 1-3108.jpg, Fiedler_Export 1-3138.jpg, Fiedler_Export 1-3165.jpg

In the beverage industry, automation is “taught” – as here in the filling system. This makes it easy to use robotics.

Fiedler_Export 1-3224.jpg, Fiedler_Export 1-3256.jpg,

Master brewer Thomas Fiedler combines the time-honored art of brewing according to Germany’s purity law with the courage to innovate.

Fiedler_Export 1-3373.jpg

Control of the system is very user-friendly thanks to KUKA.PLC mxAutomation. Brewery employees do not need any special software knowledge for this.

Fiedler_Export 1-3507.jpg, Fiedler_Export 1-3532.jpg

Master brewer Thomas Fiedler is proud of his beers. State-of-the-art technology helps the private brewery ensure consistently high quality.

Fiedler_Export 1-3568.jpg

Systems engineer Till Beyer and Thomas Fiedler jointly tinkering to ensure that the brewery, despite limited space, stays at the cutting edge of technology and thus remains competitive.

Fiedler_Export 1-3624.jpg



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Cold sterilization instead of heating makes a difference in terms of craft for the preservation of the beer. It means greater effort and the highest standards of hygiene. Thomas Fiedler is happy to put up with that for his premium beers.

Fiedler_Export 1-3684.jpg

At Fiedler, the equipment and tanks within the historic walls are state-of-the-art.

Fiedler_Export 1-3688.jpg

Fiedler beers have a good reputation in the Ore Mountains and beyond.

Fiedler_Export 1-3694.jpg, Fiedler_Export 1-3742.jpg

Mechanical engineer and beverage industry specialist Till Beyer

Fiedler_Export 1-3776.jpg, Fiedler_Export 1-3796.jpg

Christian Fiedler, an old-school master brewer with a great aptitude for modern technology and support through automation

Fiedler_Export 1-3826.jpg

The Fiedler private brewery has resided in the tranquil village of Oberscheibe in the Ore Mountains since the 19th century

Fiedler_Export 1-3860.jpg

Master brewer Thomas Fiedler in conversation with the KUKA film team

Fiedler_Export 1-3869.jpg

With Thomas Fiedler, the 6th generation will take over the family business at the end of 2022. His daughter, Vanessa, then begins her training as a master brewer.