

AT RIKA INNOVATIVE OFENTECHNIK GMBH IN MICHELDORF/AUSTRIA



All fired up
about innovation

Pellet and wood burning stoves are on trend. In order to manage the growing order numbers, the manufacturer RIKA Innovative Ofentechnik has semi-automated and digitised production at the Adlwang site. With transport systems from KNOLL Maschinenbau the company has managed to increase productivity by approx. 15 to 20 percent.

What can you expect from a company that includes innovation in its name? Simple, new developments time and again. This is certainly the case with RIKA Innovative Ofentechnik GmbH, which has its headquarters in Micheldorf, Austria. The premium manufacturer of stoves impresses its customers with new products almost every year – whether it is stoves that can be operated with firewood and pellets, stoves that can be used as baking ovens, stoves that feature automatic ash removal or stoves with a voice control function.

It is no wonder that the specialist for pellet, wood burning and combination stoves is able to record rising sales volumes all the time. Production Manager Tomislav Dramac reports: "In 2021 we were able to increase our deliveries by a high double-digit percentage. It's a good thing that we had

already put the new assembly lines in our Adlwang production plant into operation."

Because RIKA also focuses on innovation in its own production. "In 2019 we banished the previous assembly line to the second row and put a new automated line into operation. At the beginning of 2021 we added another identical line", states Tomislav Dramac. "In doing so we managed to increase productivity and also offer our employees a work environment which corresponds to state-of-the-art aspects in terms of ergonomics and occupational safety."

Solution with extremely flexible transport systems

The search for a partner for the new assembly line was difficult at the start. Because RIKA was dismissed by large providers, as the Production Manager mentions: "The reasons cited included the shortness of the line measuring only 27 metres and the high complexity we desired with regard to equipment and control technology."

On a recommendation the Production Manager ultimately



An assembly line contains six modules each with two lift tables. They move 2 cm up over the chain conveyor at the station. Then the employee can lift, turn and swivel the table, attach mechanical parts or electronics. At the end the table is put into the locked position. At the touch of a button it moves down again onto the chain and is transported to the next station.

made inquiries with KNOLL Maschinenbau, Bad Saulgau. The Swabian company, which is one of the leading providers of conveyor and filter systems for chips and cooling lubricants in the metalworking industry, has also been offering extremely flexible transport systems for almost ten years. They have a modular design in terms of mechanical and electrical equipment and software, whereby customised solutions can be realised for use in logistics and assembly. The initial contact was already

is responsible for Production Technology/Quality Management at RIKA and a contact partner for the technical implementation of the project. He confirms: "Our requirements were accepted by KNOLL, discussed, refined and implemented. The employees have a high level of technical expertise, meaning the complexity of our wishes was not a problem."

Focus on added value in the assembly line

RIKA developed a semi-automated and digitised continuous flow production, in which currently up to 40 stove versions are fully assembled. "Our idea was to separate logistics and added value", says Paul Hofner. We managed to do this with the aid of so-called logistics robots. They are driverless transport systems (DTS), which can complete the transport tasks in production fully autonomously. They bring the bodies of the stoves to the assembly line where employees perform the value-adding assembly tasks. At the end the same robots pick up the fully assembled products again and take them to packaging."

For the implementation of the project KNOLL was responsible for planning and supplying the conveyor line, ensuring functioning interfaces for the logistics robots and programming the entire system control.

A team of KNOLL and RIKA employees agreed to develop a line of six modules, each of which contains two integrated lift tables. "This means that up to twelve people can do assembly work at the same time", explains Tomislav Dramac. "Thanks



In the feeding station sensors detect the respective main bodies and forward the data to the control.

positive for Tomislav Dramac and his production team: "KNOLL is a family-run business, which also strives to be a quality and innovation leader. We immediately sensed that KNOLL is a partner with whom we can communicate on the same wavelength."

For this reason, RIKA, together with KNOLL, decided to take the production in Adlwang to the next level. Paul Hofner

to a clever allocation we managed to bring the working time of each station to under six minutes."

Another significant advantage of the KNOLL transport system is that it does not require any structural changes to the hall floor. "We were able to set up the line in a few weeks", says Paul Hofner. "We are also very flexible thanks to the modularity of the transport system. We can add or remove individual stations as required; even the entire assembly line can be moved with manageable effort."

Role model in occupational safety and ergonomics

RIKA attached great importance to a ground-level design where possible, which KNOLL can realise for the desired system with a minimum height of only 20 cm. Due to the integrated lift tables a height of 25 cm was required in this case. With surrounding platforms on which the assembly staff can stand most of the time the step height can be reduced - which means minimised risk of falling.

"With our new assembly line we also set new standards in the area of ergonomics", highlights Tomislav Dramac. "Our products are now transported on an automated conveyor line so that our employees are relieved of the manipulation of the heavy objects."



Apart from the line, the logistics department provides the components required for the attachment.

The specialists at KNOLL chose a solution based on the ground-level chain conveyor TS-G-B. This means that the main bodies are transported from station to station where integrated lift tables bring the respective product to the correct working height and position. "You no longer have to bend down or perform contortions. These are considerable improvements which our staff have commended", reports Tomislav Dramac. "With regard to the occupational safety we wanted all sources of danger to be doubly protected, which KNOLL implemented straight away for us. In the course of the inspection we received feedback from various test institutions that we are a model company in this regard." The newly created production conditions were recognised in the "Factory 2020" competi-



The main bodies required in the morning are made available in the buffer zone. The fully assembled stoves are also stored there temporarily.

tion organised by Fraunhofer Austria, in which RIKA Innovative Ofentechnik was one of the top four finalists.

Investments in Industry 4.0 technologies

But back to the assembly line and its highlights: One challenge was the exact channelling of the main bodies of the stoves secured on pallets. Because the many different models are on wooden one-way pallets of varying lengths, which must always be placed precisely onto the lift tables when passing through the assembly line. Therefore, KNOLL equipped the pick-up station with sensors which measure the pallets and forward the data to the system control.



100% control: At the last station in the assembly line all components of a stove are checked.

"The programming of the system PLC was a very challenging task due to the interaction of the various stations", confirms Production Manager Dramac. "KNOLL performed this task perfectly. In the test installation the conveyor technology already worked as we had imagined. This was impressive."

The fact that the cooperation is sustainable was already indicated with the order of the second line, which went into operation at the start of 2021. A third and fourth system are already being planned. In addition, KNOLL is involved in the planning of further automation solutions for the preassembly. Initial plans with Cobot are being prepared. Tomislav Dramac sums it up: "It is good when you have a partner like KNOLL, who is familiar with the matter and very interested in the common cause. You are happy to remain loyal to them."

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Production Manager Tomislav Dramac: "With our two new assembly lines we were able to achieve a good 20% increase in productivity."

For the RIKA article there is also a KNOLL impulse video, which is available on the KNOLL YouTube channel. Here is the link <https://youtu.be/fcbWLaEL7kc> – can also be accessed using this QR code:



RIKA Innovative Ofenttechnik...

... is a manufacturer of pellet and wood burning stoves, as well as combination products. The family business which is now run by the second generation of owners has been in existence for 70 years. For over 15 years RIKA has been producing at the Adlwang site, which is well equipped for future challenges with investments in state-of-the-art Industry 4.0 technologies.

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KNOLL Maschinenbau GmbH

KNOLL Maschinenbau is one of the leading suppliers of conveyor and filter systems for chips and cooling lubricants in metal processing. Highly flexible transport systems supplement KNOLL's product range. With its comprehensive range of products, KNOLL develops complete systems and system solutions with centralised or decentralised functions. Since 1970, KNOLL has stood for innovation, progress and growth.

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