

KNOLL33

The Company Magazine | Edition 33 | 2022

Cool colours.

Strong solutions.

Editorial

2022 was special.

The highlight of the financial year was the fact that we were finally able to have personal contact again with our employees, customers, suppliers and other business partners – this was clearly missed. Numerous trade fairs took place around the world in 2022. In particular, AMB in Stuttgart was a huge success for our family-run company. Based on the motto "Your needs, our solutions", we impressed numerous visitors with current solutions in the area of conveyors, filters, pumps and automation. Positive feedback with many visitors and great conversations showed the crucial importance of such trade fairs.

In the reporting year we also received numerous orders for large-scale plants. For example, for high-precision grinding tasks for tool manufacturing, for the aerospace area for the manufacture of turbines or for a T1 supplier for the manufacture of gearboxes and clutch housings. In July the delivery of the plant components for the largest single order in our company's history started with over 40 semitrailers.

Our R&D team was very innovative and successful. For dry machining a new device combines the Aerosol-Master™ with cryogenic cooling technology. The compact filter range is launched as a modular system with a configurator and the controls for motors reduce energy consumption by up to 70%. It is now possible to operate our KNOLL SmartConnect control via an app. The Automation business segment handles matrix productions with the aid of a standalone control of the driverless transport systems.

At the same time we were able to continue to successfully implement our international growth plans with the subsidiaries KNOLL Schweiz AG and KNOLL UK Ltd. In Switzerland we boosted sales and service with short

routes. In England, Scotland, Ireland and Wales we see potential for high-end filter systems. We also want to expand the service and spare parts business. This reduces the delivery times and offers our customers even greater security and more reliable planning.

Anyone who thought that we would experience a "normal" year in 2022 after the crisis years was quickly proven wrong. The interrupted supply chains caused us problems in almost all areas, particularly in electrical components. Numerous crises and the unstable global situation threaten global development. The many problems concerning energy, supply or prices make it difficult to plan and at the same time will permanently change consumer behaviour.

For this reason, we are particularly pleased that our company was able to significantly increase incoming orders and sales in the past year despite all the challenges and we will successfully conclude the 2022 business year. This required a huge effort from all our staff.

Having said this, we are and remain optimistic and continue to work intensely towards a diversified business line.

Even though Brussels declared a ban on burners from 2035, we believe it won't be long before they make a comeback – obviously with other fuels, e.g. hydrogen or e-fuels. We are also responding to these changes.

We would like to thank our customers and partners. We would also like to extend our thanks to all our employees for their efforts, energy and commitment in the past year.

We hope you enjoy reading our magazine and we look forward to another good year of cooperation in 2023.

Matthias Knoll

Jürgen Knoll



Cool colours.



At **GrindingHub** in May in Stuttgart KNOLL showcased the appropriate filter technology for every grinding process: the backflushing superfine filter MicroPur®, the individually configurable hydrostatic filter HydroPur, the vacuum filter VLO, as well as the fluid centrifuge CA 100.

KNOLL is now a full-service provider even for smart, automated transport and assembly systems. The company presented its systems at the logistics trade fair **LogiMAT** at the end of May/start of June in Stuttgart and at the trade fair for automation **automatica** in June in Munich. Visitors were able to see how stationary and mobile conveyor systems work together and how cobots assist operating personnel.

IMTS is the largest American automation and mechanical engineering fair. It took place in September in Chicago. KNOLL presented its product portfolio and most importantly the on-site service.



Strong solutions.



For KNOLL the motto of **AMB** in Stuttgart was "Your needs, our solutions". We support users with state-of-the-art technologies and developments for the economical production of tomorrow. Always in sight: the current challenges of our time, such as digitisation, automation and sustainability. For example, the app for the KNOLL SmartConnect control celebrated its première at AMB. The new slat band conveyor with integrated prefilter also attracted huge interest.

The atmosphere at the KNOLL stand was superb, also thanks to the broad selection of the high-pressure unit range KNOLL LubiCool®. They are available in the variants S, M and L.



The cool cocktails at the exhibition stand were just as varied as the LubiCools.



Thoughts on a wider scale,

A drive technology specialist is currently developing a "smart factory". There it manufactures gear motors, gears, shafts and rotors. KNOLL installs a central conveyor and filter system for chips and cooling lubricants for the large fleet comprising 150 turning, milling and grinding machines. It includes 100 return pump stations, 50 suction stations and 100 pressure boosting stations. The order also includes three central KSS filter systems with chip centrifuges and chip presses, as well as a central suction system. The single systems are connected to the complete systems with 22 km long pipes.

The greatest functionality and reliability were the top priorities when designing the system – a natural concomitant for KNOLL. It is also necessary to keep energy consumption as low as possible and to use the available space as efficiently as possible. The KNOLL concept meets these as well as all other technical requirements and also stands out in terms of operating and maintenance costs.

100 return pump stations
50 suction stations

Length: 52 m, width: 14 m
100 pressure boosting stations

70 chip reducers: The preliminary treatment of chips is a prerequisite for their centrifuging, briquetting, pumping and suction. Robust single and double shaft chip reducers with high cutting quality ensure reliable chip transport.

implemented efficiently.

Room size: 2 x 700 m²

Installed pipes: approx. 22 km

Refill tanks: 82,000 l (emulsion+oil)

Tank volume (filter+central systems): 480,000 l (emulsion+oil)

Total travel volume: approx. 110,000 l

100 pressure boosting stations: Demand-driven KSS high-pressure supply of machine tools with pressure-dependent pump control. KNOLL KTS screw spindle pumps are used.

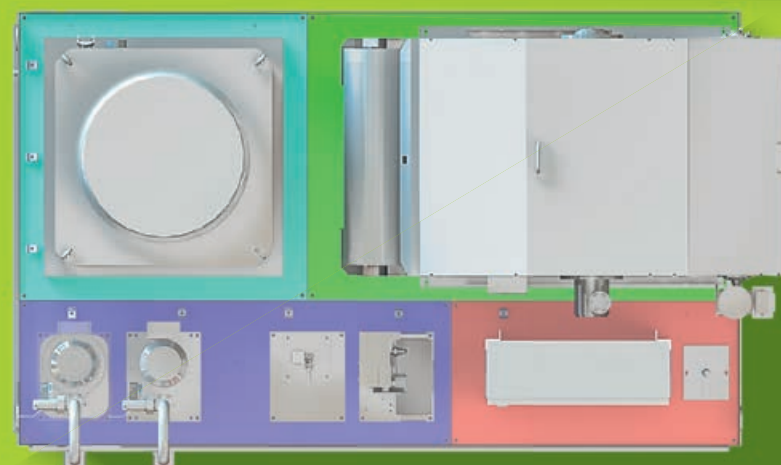
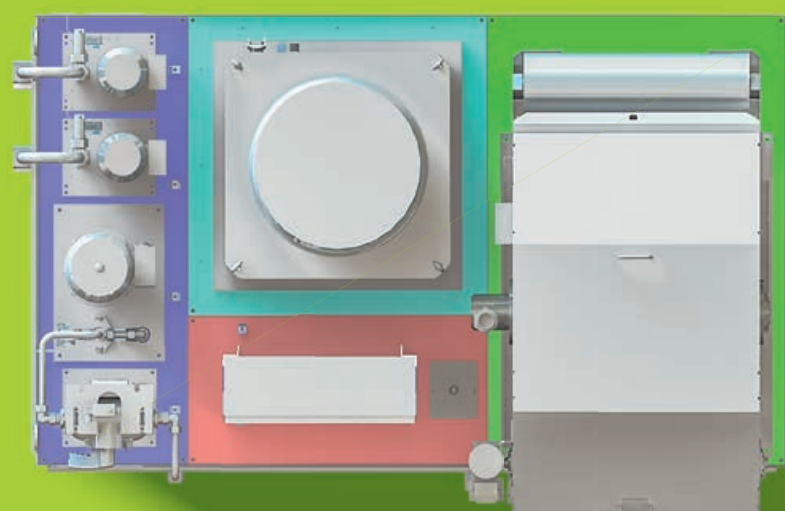
100 return pump stations: Decentralised return pump stations with circular areas for the safe transport of chips and KSS to the central systems. KNOLL TSK pumps are used.

Thinking as a tool for your success.



Remains dry.

Customer requirement: The discharge and carryover of emulsion are a "no-go" thanks to the design of the component. KNOLL combines cryogenic cooling technology in the new generation AerosolMaster™ 4000 ATS. The operation with the SmartConnect control concept is simple and intuitive.

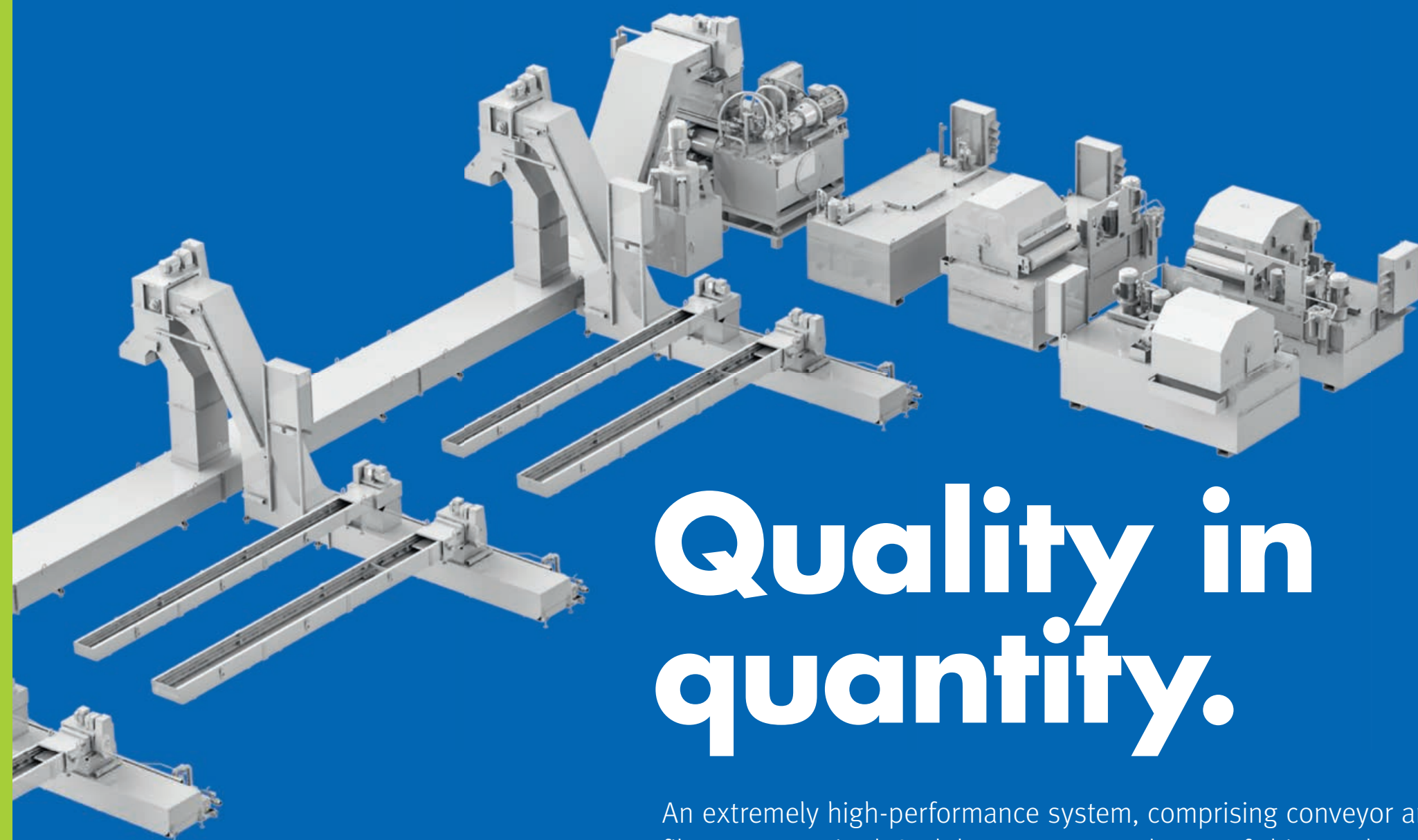


Modular system for individual solutions.

The machine tool industry benefits from the modular system. The modular design of the compact filter technology makes it possible in the future for customers to be able to configure their individual filters themselves.

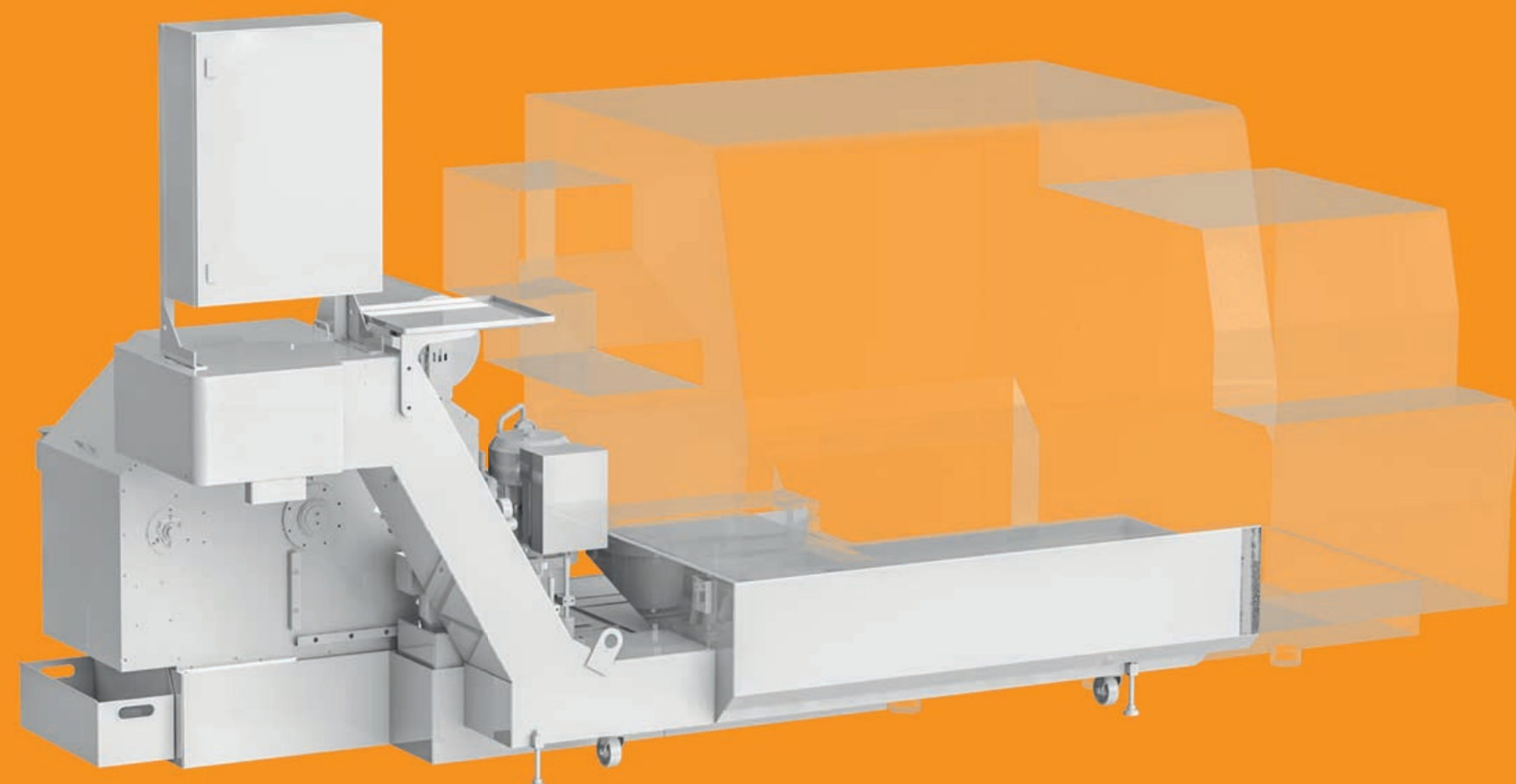
Extracts raw materials.

Aluminium to aluminium. Steel to steel. A KNOLL scraper belt conveyor receives a special device which automatically separates metals at the discharge point. A sensor detects the material and an actuator controls the discharge. Clean chip separation – perfect for the recovery of valuable raw materials.



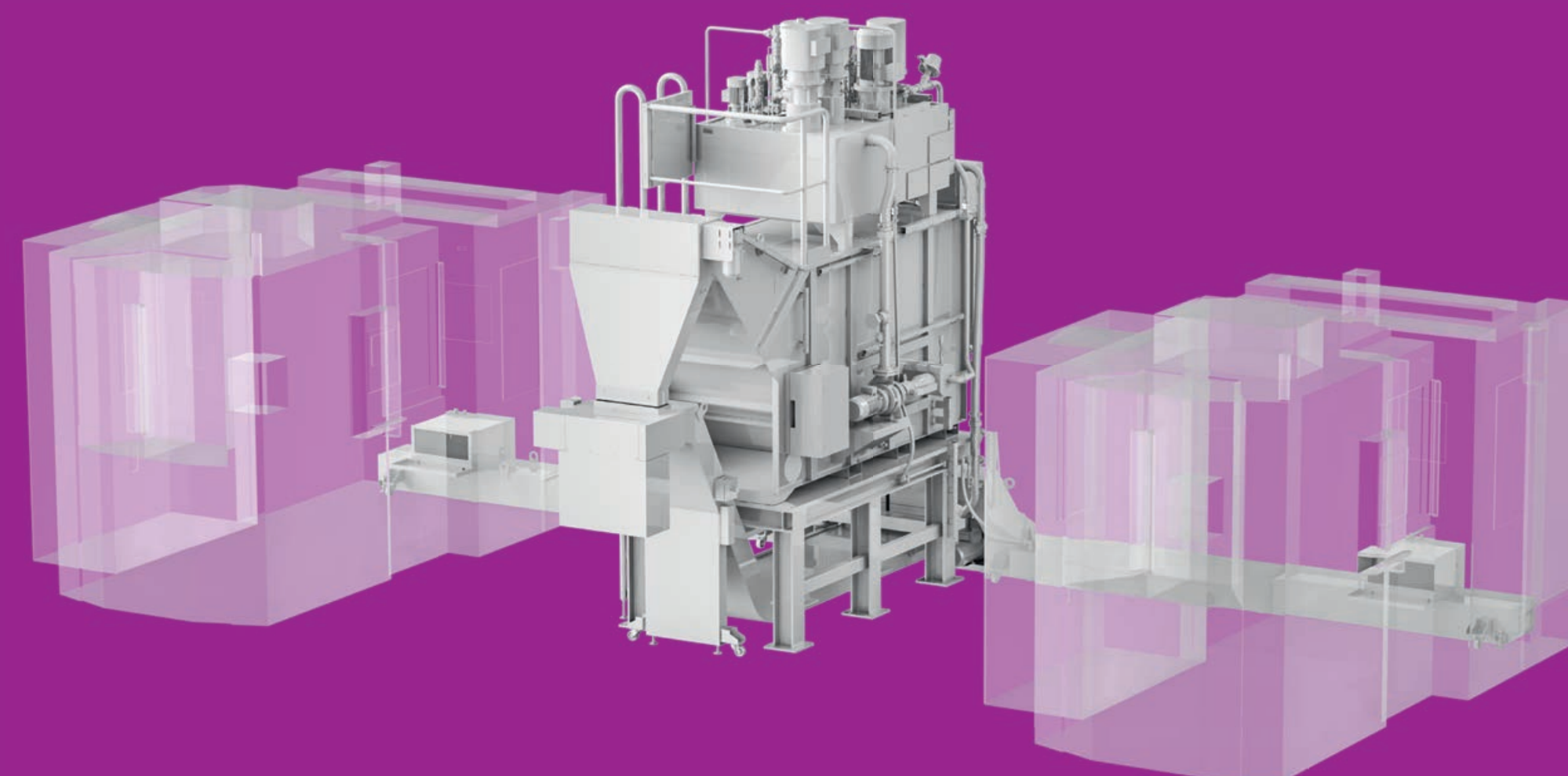
Quality in quantity.

An extremely high-performance system, comprising conveyor and filter, was required. And the enormous volumes of chips and emulsion were to be reused. A chip press produces pellets. Compact belt filters with additional fluid centrifuge perform the KSS cleaning and supply.



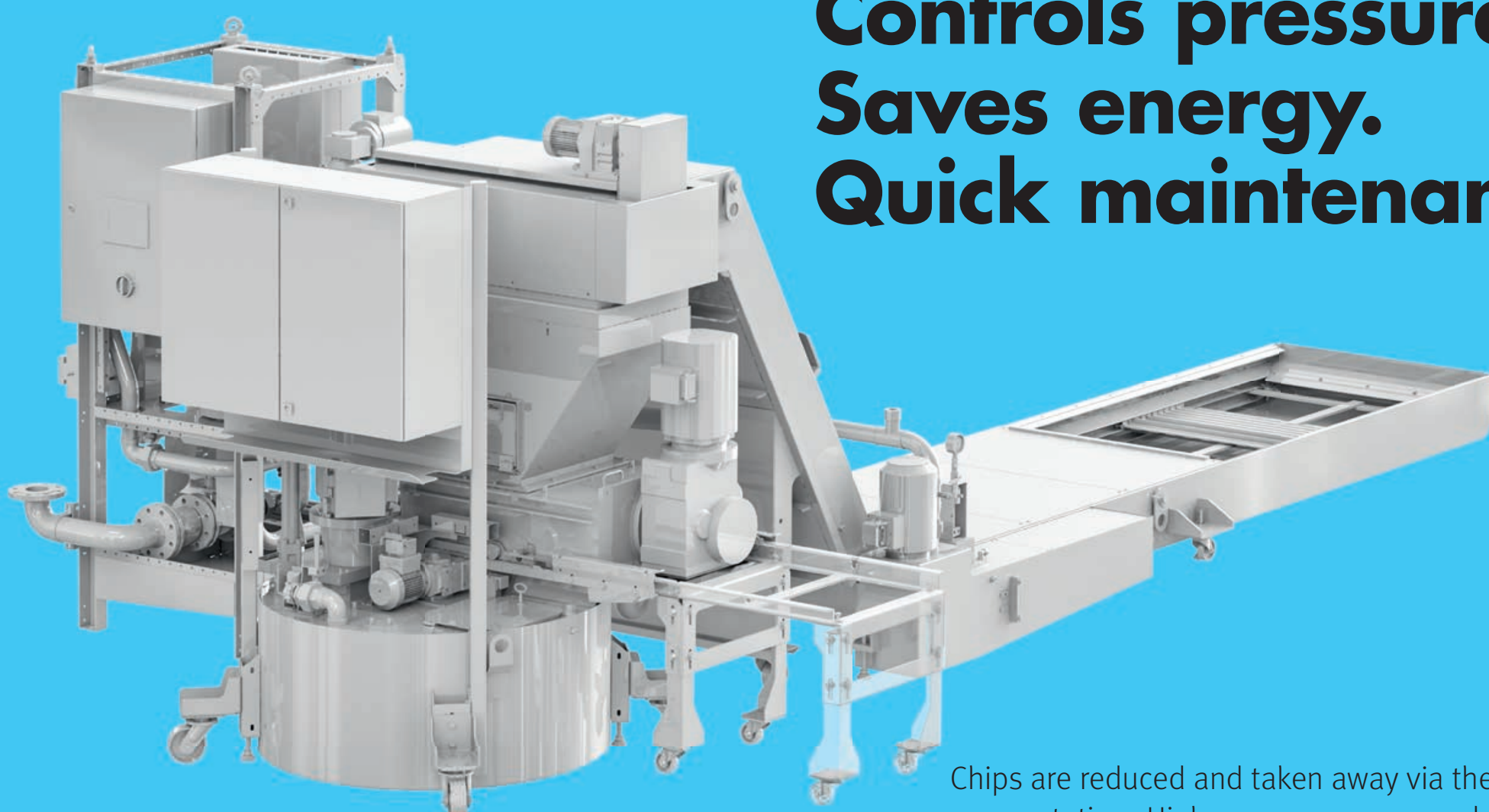
Trio in the plant construction: KNOLL conveyor, filter and high-pressure system create a compact, space-saving unit. The optimisation ensures efficient use of the available space.

Compact.



Two becomes one.

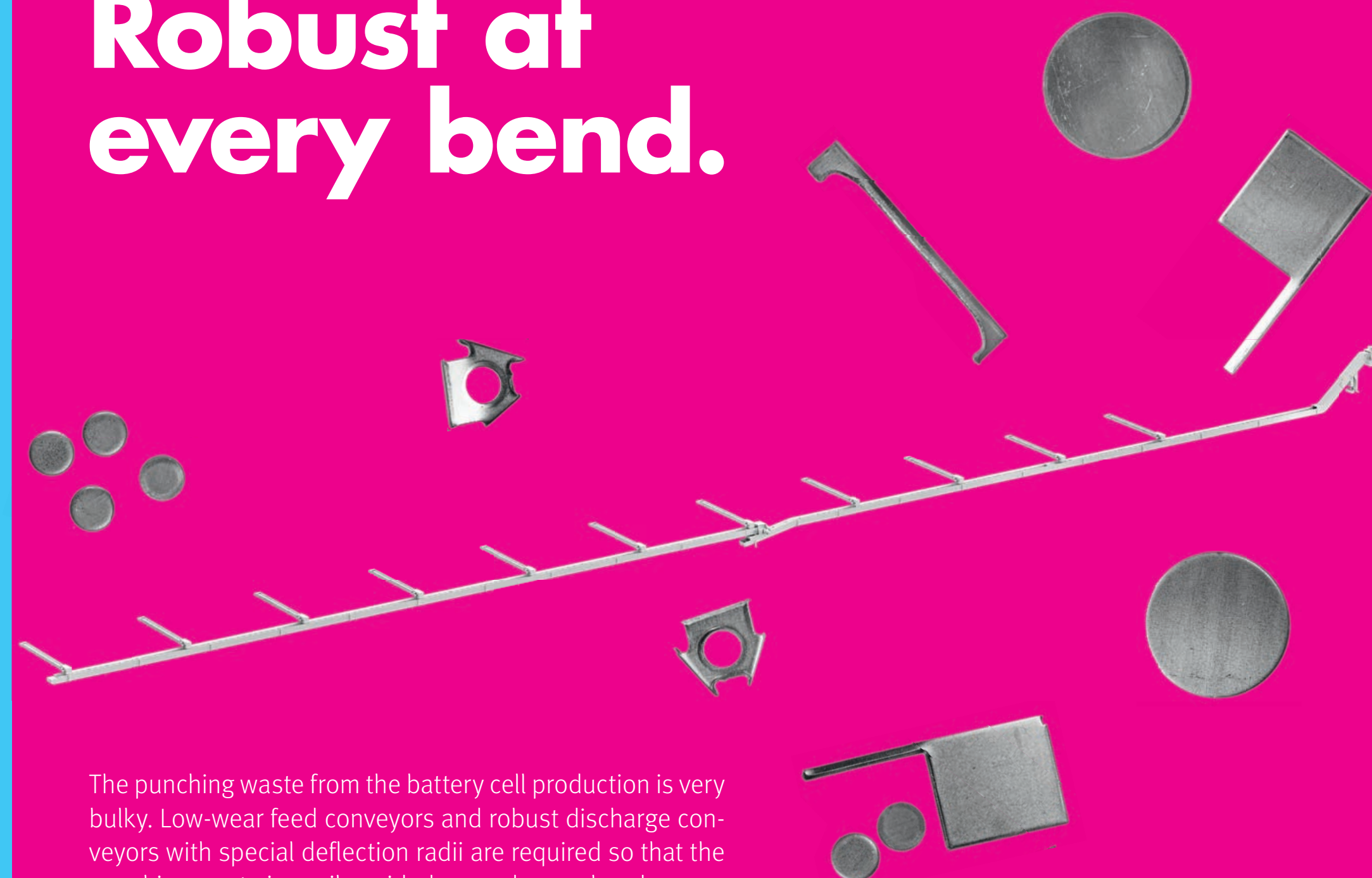
Two machine tools cannot be equipped with filter and supply technology due to the lack of space. KNOLL's idea: One filter supplies both machines perfectly.



Controls pressure. Saves energy. Quick maintenance.

Chips are reduced and taken away via the return pump station. High pump pressure and energy are generally required for large volumes. KNOLL special: A frequency converter controls the operating point, thus ensuring energy efficiency. And another customer requirement is met: The chip reducer can be removed and serviced with minimum effort.

Robust at every bend.



The punching waste from the battery cell production is very bulky. Low-wear feed conveyors and robust discharge conveyors with special deflection radii are required so that the punching waste is easily guided around every bend.

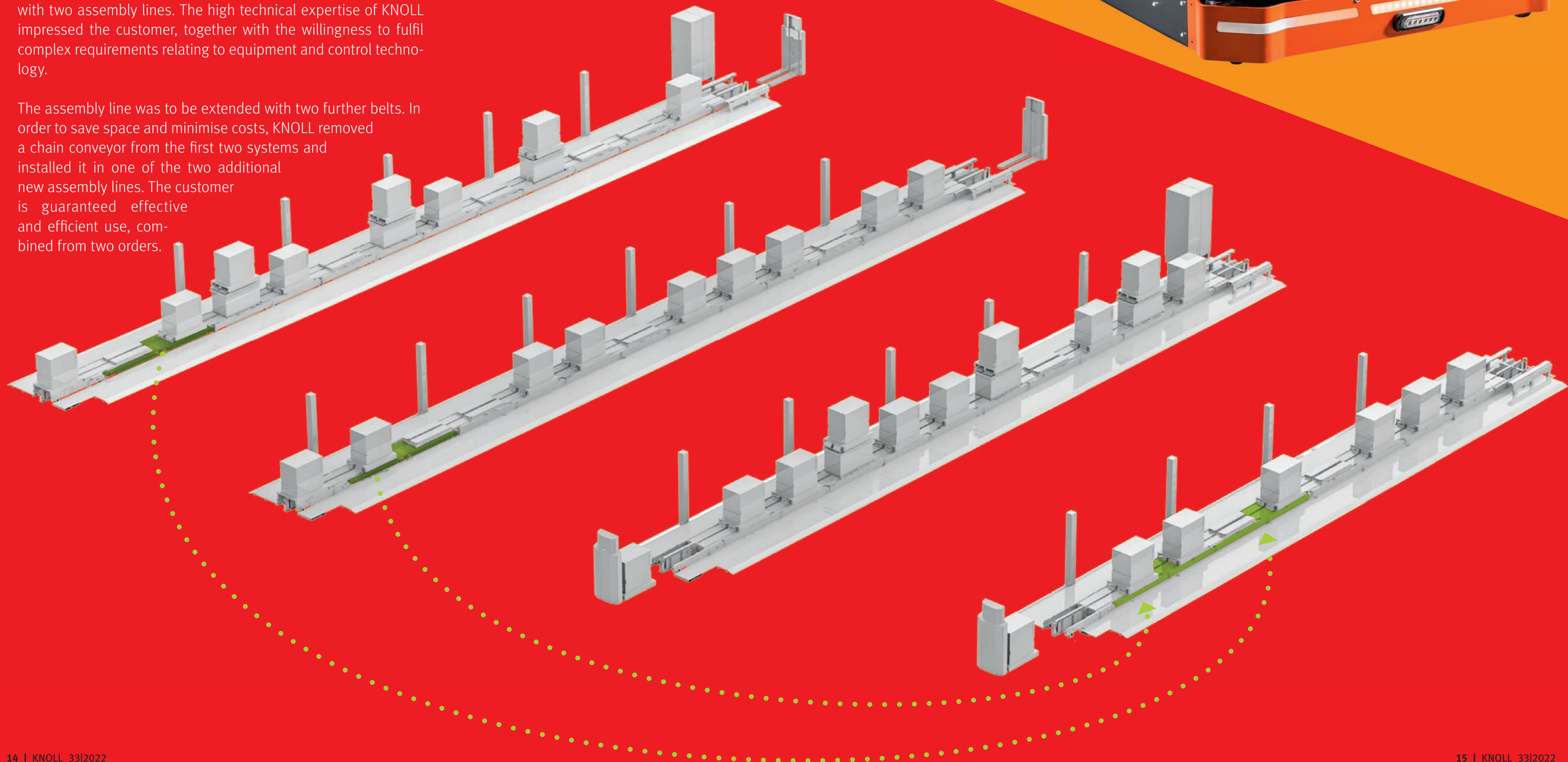
Automated for matrix production.

Two becomes four.

A specialist in pellet, wood burning and combination stoves was already successfully using a very flexible KNOLL transport system with two assembly lines. The high technical expertise of KNOLL impressed the customer, together with the willingness to fulfil complex requirements relating to equipment and control technology.

The assembly line was to be extended with two further belts. In order to save space and minimise costs, KNOLL removed a chain conveyor from the first two systems and installed it in one of the two additional new assembly lines. The customer is guaranteed effective and efficient use, combined from two orders.

KNOLL can configure and integrate customised driverless transport systems (AGV). A special feature of this AGV is its "swarm intelligence". This means that every vehicle has a standalone, agent-based control, which constantly exchanges information with all other system participants with regard to position and load status. This makes external control via an expensive, central control station superfluous. Matrix productions which require flexible, automated transport between stationary processing machines or assembly lines can be easily realised. One example is the driverless transport of chip containers.



Global success as a group.

Our KNOLL product portfolio is very successful on the world stage. As a global player it is our job to think and act internationally. Together with our headquarters in Bad Saulgau/Germany, this is enabled by our employees at all KNOLL sites around the world. They guarantee the success of KNOLL .It works with a local presence and their focus on the respective national circumstances.

#KNOLL America

KNOLL America Inc. employees 20 staff. Even though we have to wait a little longer for the new building, it is already clear how right this decision was. The USA is the biggest single export market for machine and plant manufacturers from Germany and the German engineering market wants to continue to expand there.

#KNOLL UK will commence operations on 1 January 2023 and replace the previous trading partner. The aim of the newly founded subsidiary is to expand business in England, Ireland and Scotland with a local presence.

#KNOLL Polska reliably ensures the availability of sheet metal building shells for the KNOLL assembly. Thanks to our own service staff we are close to our Eastern European customers.

#KNOLL Italia shows how important a local presence is in combination with the close alliance of mindset and language.

#KNOLL Schweiz

The sixth subsidiary of the KNOLL family, KNOLL Schweiz AG, with its registered office in Neuhausen am Rheinfall, has been in operation since 1 January 2022. We are boosting sales and service with short routes.

#KNOLL China

KNOLL China Machinery Co., Ltd. is responsible for the assembly of standard systems of our OEM customers, who are represented on the Asian market, and providing services and spare parts. Despite the two-month lockdown in spring 2022, KNOLL China is on course for further growth with an increase in incoming orders and sales compared to the previous year.

On 1 September 2022 we extended a warm welcome to our new trainees and apprentices: 8 industry mechanics, 2 construction mechanics, 1 cutting machine operator, 6 mechatronics engineers, 4 electrical engineers in production engineering, 2 electrical engineers in automation technology, 1 specialist in warehouse logistics, 2 technical product designers, 2 industrial clerks with additional qualification in technology, 2 industrial clerks with additional qualification "AusbildungPlus", 1 DHBW industrial engineering student.

KNOLL LIVE events promote the company and the training professions using specific topics. In workshops accompanied by apprentices and trainees young people can obtain an initial impression of real life at KNOLL.

An extension line was manufactured this year by the **electrical engineering apprentices**.

In the **commercial area** it was necessary to initiate an order process of office material, which is then delivered to the customer's home.

The **mechanics** faced the task of constructing an air pump.

The **construction mechanics** welded for all it's worth. Each participant received a welded money box in the shape of a VRF filter.

The **construction phase** ranged from pen and paper to CAD and 3D printing of a bottle opener in the shape of a chip conveyor.

At **KNOLL LIVE parents** the company informed interested parents at an evening event of the repertoire of training and study options including requirements and further qualification for the future.

According to a large-scale survey, the trainees and apprentices confirmed our ability and expertise: **"Superb training organisation – certified by trainees and apprentices in 2022".**



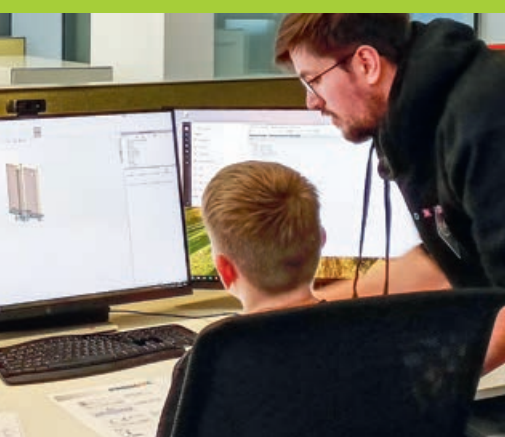
The newbies. The loyal.

We congratulate the following members of staff on 25 years of service: Michael Knoll, Oliver Lenkeit, Wolfgang Lorenz, Rainer Öhl, Alexander Schirmer, Waldemar Schulz, Helmut Stumpp, Wilhelm Szladek, Vitali Wunder (missing: Achim Jakob). Congratulations to the following member of staff on 40 years of service: Thomas Scheck.

We wish the following members of staff well as they enter retirement: Johann Hack, Albrecht Hinderhofer, Franz Kienzle, Paul Merk, Werner Scharpf, Wilhelm Szladek, Jerry Wayne Thompson (missing: Jürgen Fiehn, Franz-Josef Fleisch, Jens Goschala, Norbert Haberbosch, Nikolaus Harraßer, Thomas Jung, Alwin Kessler, Josef Luib, August Müller, Harald Reuner).



The **Trainees' Night** is the training day in a new guise. In line with the motto: "A creative night full of information. A night with plenty of future.", KNOLL presented training professions and courses in a refreshing setting with food and drinks. Music and cocktails rounded off the successful evening.





KNOLL Maschinenbau GmbH
Schwarzachstraße 20
DE-88348 Bad Saulgau
Tel. +49 7581 2008-0
Fax +49 7581 2008-90140
info.itworks@knoll-mb.de
www.knoll-mb.com

IMPRINT: KNOLL Maschinenbau GmbH,
Schwarzachstraße 20, DE-88348 Bad Saulgau,
www.knoll-mb.com **Editor:** Matthias Knoll |
Sandra Wiedergrün **Texts:** Alexandra Freund-Gobs |
Matthias Knoll | Jürgen Knoll **Photos:** adobe stock |
Sebastian Hauenstein | KNOLL Maschinenbau GmbH |
Frank Müller | Rack Fotografie | Safelog
Printing: F&W Druck- und Mediencenter GmbH
Design: MüllerHocke