

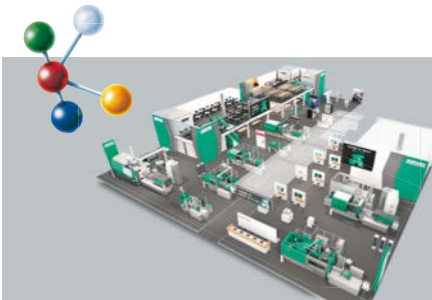
today

The ARBURG Magazine

Issue 80

2022





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IMPRESSUM

today, The ARBURG Magazine, Issue 80/2022

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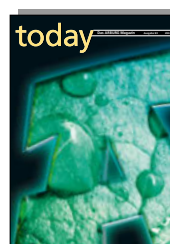
Responsible: Dr Christoph Schumacher

Editorial advisory board: Karina Gaiser, Christian Homp, Martin Hoyer, Rainer Kassner, Juergen Peters, Dr Victor Roman, Birgit Roscher, Christoph Schaber, Bernd Schmid, Bertram Stern, Dr Thomas Walther, Manuel Woehrle, Andreas Ziefle

Editorial team: Uwe Becker (text), Andreas Bieber (photos), Dr Bettina Keck (text), Hugo Lenhardt (photos), Lisa Litterst (layout), Susanne Palm (text), Peter Zipfel (layout)

Editorial address: ARBURG GmbH + Co KG, Postfach 1109, 72286 Lossburg, Germany

Contact: +49 (0) 7446 33-3149, today_kundenmagazin@arburg.com, www.arburg.com



The unusual “A” in the ARBURG logo is part of the key visual for the K 2022 communication line: “There is only a Plan A” (see page 4).





Dear Readers,

It feels like the three years between two K trade fairs have never been as turbulent and unpredictable as these past ones. Shortly after K 2019,

the coronavirus pandemic broke out. This was followed by material shortages and supply bottlenecks, skyrocketing material and energy prices, and the war in Ukraine. These social, economic and political developments and situations are constantly presenting people and companies alike with new challenges! We are pleased to have coped very well with them so far – thanks to our one-location strategy, our strong, primarily local supply chains, and our forward-looking materials management over the long term. Ensuring that our customers receive their ready-to-use machines as quickly as possible requires a great deal of resources. However, this doesn't mean that our devel-

opments are at a standstill. Quite the opposite, as our trade fair appearance at K 2022 clearly demonstrates. "There is only a Plan A" is our line of communication, and we explain it in this issue by focusing on sustainability and digitalisation as well as our exhibit highlights.

As usual, however, "today" also features some very special applications, such as the manufacture of 159 product variants with just one turnkey system and the 100-percent traceability of automotive parts. A research project on producing implants with the freeformer directly in clinics offers an exciting glimpse into the future.

We hope you find inspiration in this issue's articles.

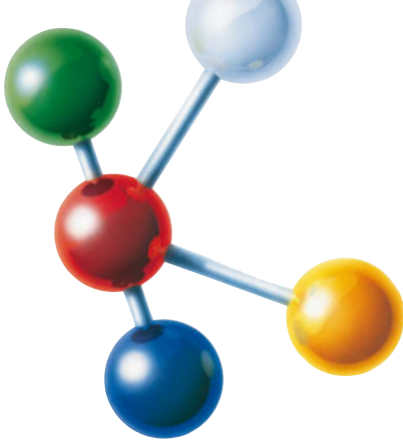
"Wir sind da." We are here to turn your ideas into reality.

We hope you enjoy reading this issue of "today".

Juliane Hehl
Managing Partner

**THERE
IS ONLY
A PLAN**





Wir sind da!

K 2022: Sustainability and digitalisation hand in hand

Circular economy, digitalisation and climate protection. These are the focal points of K 2022, the world's leading trade fair for plastics and rubber, in Düsseldorf, Germany. In other words, the exact same topics of global importance that ARBURG has been advancing for decades. "There is only a Plan A" is the fitting title of ARBURG's communication line for K 2022, where the machine manufacturer will be showcasing itself as a pioneer in resource conservation closely linked to digitalisation.

"'Plan A' is an expression of ARBURG's contribution and solutions as a machine manufacturer to the important global issues surrounding sustainability, the circular economy and carbon reduction," explains Dr Christoph Schumacher, Director Marketing, adding that "There is only a Plan A" also makes it clear that there can be no "Plan B" when it comes to sustainability – a nod to the sustainability movement's slogan "There is no Planet B", and a great fit with this year's focal points at K.

Over 2,300 square metres of ARBURG

At K 2022, ARBURG will clearly illustrate how highly networked, digitalised manufacturing helps to conserve resources and increase production efficiency. It's all about the synergy between the circular economy and high-tech, with the help of targeted digitalisation. ARBURG's vision

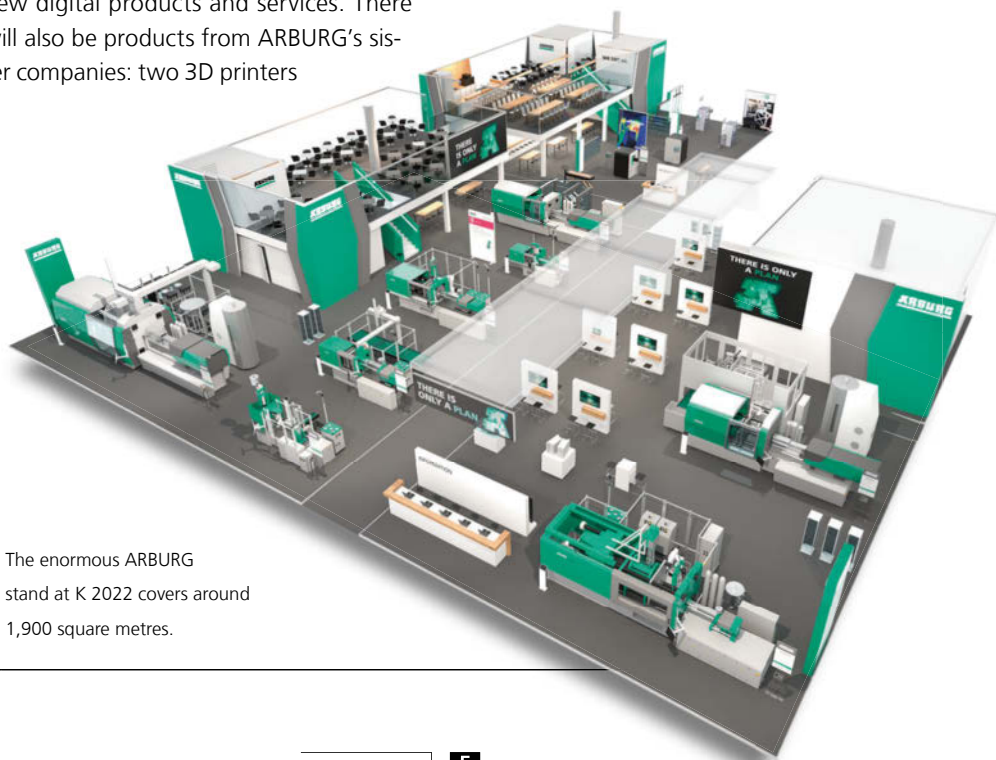
for the implementation of "Plan A" together with its customers will be shown both at the ARBURG stand, which covers around 1,900 square metres, and in the arburgGREENworld pavilion of the VDMA Circular Economy Forum, which covers more than 400 square metres.

Mint green as far as the eye can see

With a total of eleven machine exhibits on the main stand and in the pavilion, ARBURG will be showcasing a representative overview of its portfolio for injection moulding (see page 8) and additive manufacturing (see page 11). arburgXworld will also be prominently represented – including new digital products and services. There will also be products from ARBURG's sister companies: two 3D printers

from innovatiQ, and AMKmotion components for the ALLROUNDER's drive train and for system solutions from ARBURG. Another important topic, because the drive train is the seal of quality of a modern, efficient injection moulding machine.

Finally, a further 15 ARBURG systems will be featured on partners' stands – meaning that ARBURG's familiar mint green will once again be prominently displayed throughout the Düsseldorf convention centre.



The enormous ARBURG stand at K 2022 covers around 1,900 square metres.



Blossoming prospe

K 2022: Pioneer in sustainability, resource conservation and the

ARBURG's communication line at K 2022 sums it up in a nutshell: "There is only a Plan A" – even when it comes to sustainability. ARBURG's position as one of the pioneers in this area is particularly evident in the arburgGREENworld pavilion at the VDMA Circular Economy Forum, where the machine manufacturer brings the topic to life. The focus is clearly on the future and on the responsibility that the company is shouldering for the "next generation" and for the sensible use of plastics as a recyclable material.

Visitors entering the arburgGREENworld pavilion, which covers more than 400 square metres, will find themselves at the heart of arburgGREENworld, experiencing nature at its purest with water, plants and birdsong.

Plan A – now and in the future

In the midst of this surprising oasis of wellbeing, the focus is on nothing less than sustainability in production and products – in other words, the future of plastics processing and a topic that concerns and motivates everyone: the future of planet Earth! The ARBURG team, which includes

many apprentices, will explain arburgGREENworld to visitors – that is, the machine manufacturer's multi-layered activities in the areas of sustainability, resource conservation and the recycling of materials. Anyone with specific questions – for example on the carbon footprint of injection moulding machines, the sorting of plastic waste using HolyGrail technology and digitalisation, or the R-Cycle initiative – can contact the experts directly at three advice stations. Our experts can also provide information on ARBURG's CDP assessment and on sustainable production with the use



of photovoltaics, wind power and geothermal energy, for example, at the company's central location in Lossburg, Germany.

"Green" ALLROUNDER

Of course, injection moulding will not be neglected: an electric ALLROUNDER 370 A will take centre stage in the pavilion, producing UX Green universal plugs from fischer, one of the market leaders for fas-

In the arburgGREENworld pavilion at the VDMA Circular Economy Forum (graphic right), an ALLROUNDER will be producing sustainable fischer plugs in the typical colour of the UX Green products (picture right).



Photo: Fischerwerke GmbH



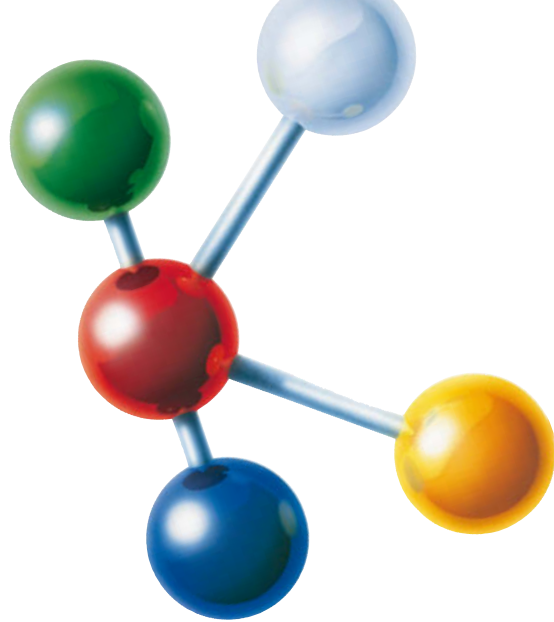
cts!

circular economy

tening systems. This example of application shows how the circular economy can work in practice: The processed plastic consists of 50 percent renewable raw materials. The sprue is ground right at the machine and fed back into the process as post-industrial recyclate (PIR). The ALLROUNDER is equipped with the ARBURG recyclate package and smart control functions for the reliable processing of recyclates.

The plastic waste is ultimately turned back into a high-quality and durable product.





You'll be amazed!

K 2022: Injection moulding perfected

Practical and visionary at the same time: eight ALLROUNDER exhibits at ARBURG and a further 15 at partner trade fair stands will amaze trade visitors. This is because they impressively demonstrate how high-end injection moulding technology, digital cross-linking and innovative controller functions can be used to manufacture high-quality plastic products that are fit for the future – smart, efficient, automated and sustainable.

The production of the stylish tool case with an ARBURG design on a hybrid ALLROUNDER 1120 H with a clamping

force of 6,500 kN is guaranteed to turn heads. A MULTILIFT V 40 robotic system inserts eight foils from Leonhard Kurz for in-mould lamination and removes the upper and lower shells. The ARBURG logo is added downstream in a hot stamping station and the tool case is then completed manually with the centre section, handle, locking clips and feet.

"Intelligent" filling simulation

This exhibit features the GESTICA controller for which many smart functions, such as aXw Control FillAssist, are available. Visitors here will be treated to the first appearance of Simcon's VARIMOS plug-

in which uses AI to show the effects of changes to machine parameters.

Reliable recycle processing

No less than three exhibits feature the ARBURG recycle package and will be demonstrating the reliable and sustainable processing of recyclates.

An electric ALLROUNDER 470 A will produce PP handles from post-consumer recycle (PCR). The aXw Control ReferencePilot function is also integrated into the GESTICA controller. Hardware and software features control the pressure profile in the mould and compensate for fluctuating material viscosities.





A hydraulic ALLROUNDER 270 S compact will process recycle made of glass-fibre reinforced PPS. An INTEGRALPICKER V separates the sprue and ejects it into a mill to return the material directly to the process. The exhibit also has secure 5G mobile connectivity – a pilot project by ARBURG and Telekom.

“Smart” networked machines

Another example of digitally networked production can be seen on a vertical ALLROUNDER 375 V. The production cell also includes a six-axis robot, a laser station and the ARBURG Turnkey Control Module (ATCM) Scada system. A bicycle tool will be produced from recycled PA66/6 (GF 50). The two halves are clipped together and the finished parts laser-marked. The ATCM visualises and collects part-specific data from the loaded part and end product for 100 percent traceability.

Another “smart” K exhibit is a hybrid Packaging ALLROUNDER 630 H in clean room design that can produce around

18,000 transparent PET blood tubes an hour.

The machine communicates with the mould, hot runner controller, material dryer and automation via the GESTICA. The data is passed directly to the control system via OPC UA.

An electric ALLROUNDER 720 A demonstrates that high-quality injection moulding technology can be an alternative to thermoforming: the high-performance machine is equipped with the new size 1300 injection unit and achieves high injection volume flows thanks to precise AMK servo motors. A 4-cavity mould from Brink is used to produce thin-walled IML round cups from PP monomer material using injection-compression moulding.

The servo motors from AMKmotion also perform well in the production of Luer-Lock connectors for medical technology,

At K 2022, the spectrum of moulded parts is broad: it ranges from the stylish mould case (picture above), produced on a large ALLROUNDER 1120 H (picture below left), to the small Luer-Lock demonstrator for medical technology (picture below right).





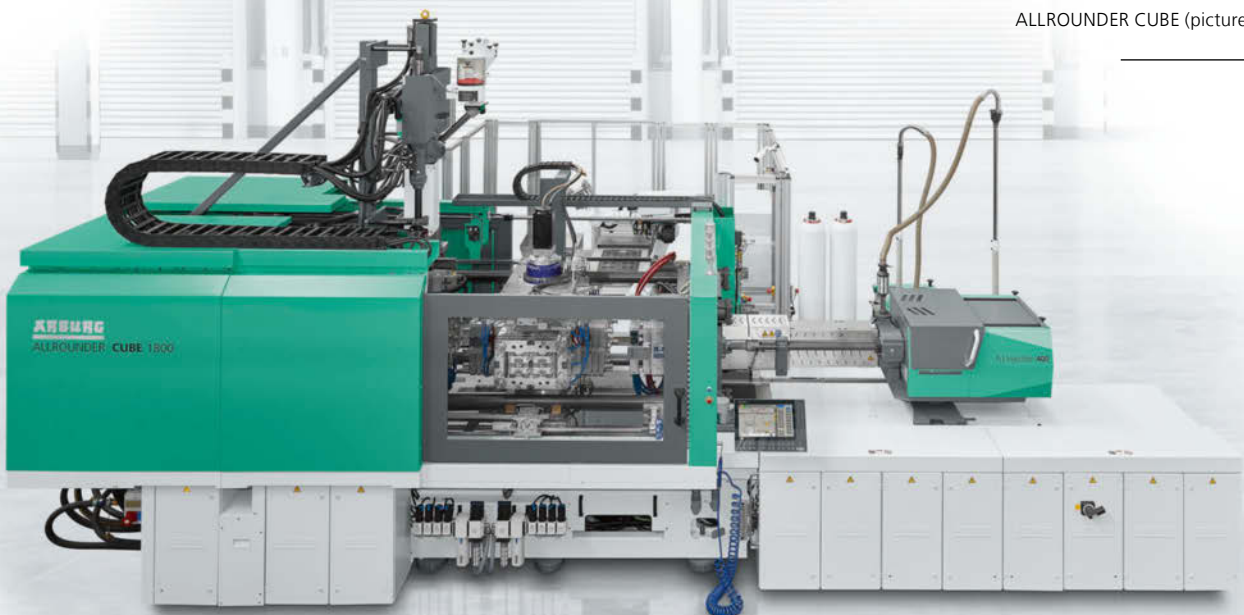
as shown on an ALLROUNDER MORE 1600. Here, four servo-electric mould axes control the core-back, lifting, capping and unscrewing functions. Handling with a Yaskawa six-axis robot directly programmable via the GESTICA will be on show for the first time.

An ALLROUNDER CUBE 1800 with an 8+8+8-cavity cube mould from partner Foboha, who also supplied the new CITI technology for rotating the pre-moulded parts on the passive cube side, is an ex-

ample of injection moulding to perfection. The three-component machine produces functional components from PP, TPE and POM. A six-axis robot simultaneously fills the mould, cools it and removes the parts.



ARBURG's injection moulding technology is as diverse as the products manufactured at K 2022 (picture above). One highlight is the production of a three-component functional part (small picture) on an ALLROUNDER CUBE (picture below).



On course for growth

K 2022: Complete portfolio of ARBURGadditive

The whole world of plastics processing will be on show at ARBURG's K trade fair stand. Visitors can experience innovations not only in the injection moulding sector, but also in the field of additive manufacturing: with the complete product range from ARBURGadditive. The large freeformer 750-3X from ARBURG for processing original plastic granules will be celebrating its premiere while exhibits from innovatiQ showcase the additive processing of liquid silicone rubber (LSR) and 3D printing filaments.

The new freeformer 750-3X has a build chamber around 2.5 times larger than that of the freeformer 300-3X and a usable surface area of 330 x 230 x 230 millimetres. The three compact mass pressure generators for droplet discharge are driven by powerful AMK motors. At the trade fair,

the industrial small-batch production of housing parts will be shown as an example.

A freeformer 300-3X designed for high-temperature plastics will process Ultem 9085, an original flame-retardant material approved for aerospace applications.

3D printed 55 percent faster

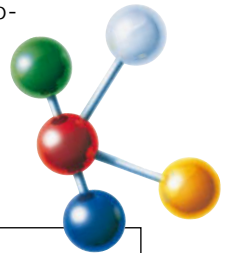
Thanks to optimised software and grid-shaped support structures, the freeformer produces these parts up to 55 percent faster than before with ARBURG Plastic Freeforming (APF), depending on the geometry and application. At a fill level of around 20 percent, this produces lightweight structures that save material and can be removed quickly without finishing work. Trade visitors can form their own impression with the help of a wide range of functional components.

Another two exhibits come from innovatiQ, a member of the ARBURG family.

A machine from the LiQ series will showcase the additive manufacturing of LSR components using liquid additive manufacturing (LAM).

New product from innovatiQ

The new TiQ 2 machine demonstrates how thermoplastics and fibre-reinforced materials can be reliably processed with FFF (fused filament fabrication) to produce ready-to-use components with complex geometries.



ARBURGadditive will be presenting new machines and high-performance processes for industrial additive manufacturing at K 2022.





Health. Worldwide.

Polynet: Over 1.2 million high-tech medical plug connections per

If you want to be a player in the global medical technology market, you have to be at the top of your game. Polynet from Thailand is one of these 'global players'. Proof positive of this: a closed transfer system for oncological drugs called Q-FLO which is used worldwide and has been patented several times. Developed in San Diego, California by I3 Infusion Innovations, Inc. and manufactured in Thailand with ALLROUNDERS. Globalisation at its best.

when radiopharmaceuticals are used to fight cancer.

Quality in the millions

For Polynet CEO Khun Kanchana Laowrattana, there was no doubt that ALLROUNDERS alone would be used to produce the plug connections: "Quality and quantities of initially around 1.2 million per year are extremely important for Q-FLO in particular because this product is

also used in the administration of special oncological drugs."

Electric and hydraulic ALLROUNDERS equipped for liquid silicone (LSR) processing are used in Q-FLO production. The machines are in permanent operation for 22 hours a day, and are valued above all for their high repetition accuracy, precision and performance. "ARBURG is simply a pioneer in the industry and has the most experience in silicone processing, not to mention support and service," says Khun

The easy-to-use Q-FLO plug connection comes into play when special medications are being prepared and dispensed, for example in chemotherapy. It prevents even a single droplet from being lost – and possibly impairing the effect of the medication – when ampoules and containers with medication doses are connected to bags, syringes, and tubes, for example. Secured by a clear acoustic and also visual signal, Q-FLO protects both patients and medical staff. This makes it impossible for potentially toxic vapours to escape, for example



Khun Srichai Laowrattana, Chief Marketing Officer at Polynet, relies on ARBURG's quality and expertise (picture right) for the high-end production of the Q-FLO plug connections (picture above).

Photos: Polynet Thailand

year

Srichai Laowrattana, who works alongside his wife in the company as Chief Marketing Officer (CMO), about the reliable ALLROUNDER technology.

Complete production in the clean room

The product, which is also fully compliant with the United States Food and Drug Administration's USP 797 and USP 800 standards, consists of five plastic parts assembled together with two silicone parts. It is produced in 4-cavity moulds in a cycle time of 45 seconds – including the demoulding of the threaded parts. The individual articles are automatically removed from the moulds and transferred using systems developed in-house. The individual parts are all moulded on ALLROUNDERS and then assembled in the same clean room. Subsequently, the assembled products are tested for leaks. Polycarbonate, copolyester and liquid silicone are processed for production.

Polynet has now been working with ARBURG for eight years and is more than satisfied. The Thai company particularly

likes the fact that the injection moulding technology is constantly being further developed. "Whenever we have questions, we always get knowledgeable and expert answers from ARBURG. The use of ARBURG technology has simply made many of our sequences much more efficient," says the Polynet Managing Director by way of praise. Polynet is already very well positioned in the region as well as in the US. But the company is also looking to increase its presence in Japan, Australia and Europe. The further development of the Q-FLO plug connection could be helpful in this respect, as Polynet will also manufacture the successor model Q-LOC.



INFOBOX



Name: Polynet Co. Ltd.

Founded: 1998

Locations: Bangkok, Thailand and Hai Duong, Vietnam

Turnover: EUR 23 million (2021)

Production area: 15,000 square metres, including 5,000 clean room production

Employees: Approx. 500

Industries: Automotive, medicine, consumer goods

Contact: www.polynet.co.th

Saves time and mo

arburgXworld customer portal: Added value in all areas

ARBURG invested in the digitalisation of its product range at an early stage and continues to expand its digital services. Customers are given an easy introduction to its arburgXworld portal with a free basic entry package and a free trial version of the premium package for three months. In this interview, Stephan Reich, Director IT Digital Solutions, and Benjamin Franz, Team Manager Digital Solutions (Sales), explain what added value the digital services offer.

today: Which packages are included in the arburgXworld customer portal and what do they represent?

Stephan Reich: Basically, there are three packages available: the free Basic package and the Premium and Premium Connect packages, both of which are subject to a charge. The Basic package itself includes seven apps, and the other two have five additional apps that offer users enormous added value.

Benjamin Franz: arburgXworld saves time and money. Our customers have round-the-clock access to all relevant data. The availability of their systems increases, as does the assured quality of their production. A sample calculation based on a machine fleet of 20 machines and Eurostat values already results in savings of around 7,000 euros per year – just by using the free Basic package. The Premium and Premium Connect packages, which are subject to a charge, offer even more service, functionality and potential savings.

today: Who has been using the customer portal apps so far?



Benjamin Franz: The range of users is diverse. After all, arburgXworld offers great potential for ARBURG customers – a fact that was also confirmed to us in an anonymous survey, with more than 90 percent of users saying that they had become much more efficient thanks to our digital services.

Stephan Reich: With our portal, we are pioneers not only in the injection moulding industry, but also in the entire mechanical engineering sector. If you use arburgXworld, you can save several thousand euros per year, as already mentioned.

ney!



In the new arburgXworld room in Lossburg, Stephan Reich (right), Director IT Digital Solutions, and Benjamin Franz (left), Team Manager Digital Solutions (Sales), explain the digitalisation of production via the ARBURG IIot gateway.



can access production-relevant documents at any time. In the Shop, with its graphical spare parts catalogue, I can visualise detailed drawings and provide critical support for maintenance. Even small services, such as spare parts tracking in the Calendar, are very tangible tools that make daily work easier.

Benjamin Franz: And users can boost their efficiency even further with premium services such as VirtualControl, Machine-Finder and DataDecoder. They can also bring more transparency to their production processes with the MachineDashboard and AnalyticsCenter.

portal. To achieve this, we actively record customer and market feedback and incorporate this

into our digital services.

Stephan Reich: Digitalisation remains challenging, but here too, "Wir sind da." We are here for our customers and will continue to expand and merge our offerings and digital services so that we can provide them with extensive support in the form of information and training. By the way, a conversation about this costs nothing and can be very useful!

today: We talk a lot about added value. What specific benefits can customers derive from the customer portal and how?

Stephan Reich: This is something that can be illustrated with three striking examples from the Basic package. MachineCenter ensures that I always have an up-to-date overview of the machine fleet and

today: So the present is already quite digital. What will the future be like?

Benjamin Franz: It will be even more digital, because we will continue to expand – in every direction – the connectivity between our machines, GESTICA's intelligent assistants and the arburgXworld



Website
arburgXworld



Photo: Shotshop GmbH / Alamy Stock Photo

freeformer in

Project CAMed: Implementing additive manufacturing in a clinic

A possible scenario: A patient is admitted to a hospital's emergency department with serious injuries. An implant specially adapted to her injury is required. Wouldn't it be great to be able to quickly access customised implants made directly in the hospital? This is exactly what the CAMed project at the Medical University of Graz, Austria, is all about – and the freeformer is part of it.

In the CAMed (Clinical Additive Manufacturing for Medical Applications) project, which is scheduled to run for several years, a total of seven scientific institutions and 13 companies from Germany and abroad are working together to advance the development of a process chain for 3D printing in hospitals so as to take patient treatment to a new

level. CAMed is financially supported by the Austrian Research Promotion Agency (FFG) and the Federal State of Styria (SFG).

Fast, personalised implants

"We want to adapt additive manufacturing techniques and materials to human medicine and also develop them ourselves so that personalised, precisely fitting implants can be produced and inserted directly in the hospital within a very short time," says Professor Ute Schaefer, scientific project manager, describing the project's goals. Compared to additive manufacturing in other industries, human medicine has particular sensitivities such as sterilisation and tissue compatibility, which make extensive basic research necessary.

Expertise and technology from ARBURG

As one of the industrial project partners, ARBURG assists in the selection of new or optimised, application-specific materials and offers suitable production technology in the form of the freeformer and ARBURG Plastic Freeforming (APF). These therefore become an important part of the entire process chain which covers everything from procurement, analysis and implementation of patient data to simulation and data preparation for printing and the actual production of the implants. The freeformer 200-3X went on loan to the University of Leoben, Austria, also a project partner. In parallel with the trials taking place there, ARBURG is also working on the further development of the APF process to adapt it to human medical re-

Personalised implants may be required in many places in the body (large picture). Lukas Hentschel, research assistant with the CAMed project, shows how data can be prepared in a very short time and how a ready-to-use rib can be additively manufactured with the freeformer (small pictures from left).



the OR

al setting

quirements. Test materials used included PCU, PMMA, PPSU, PP and PET-G, which were examined for biocompatibility, sterilisability, post-treatability and mechanical resilience via tensile strength, bending and toughness tests.

Medical 3D printing centre

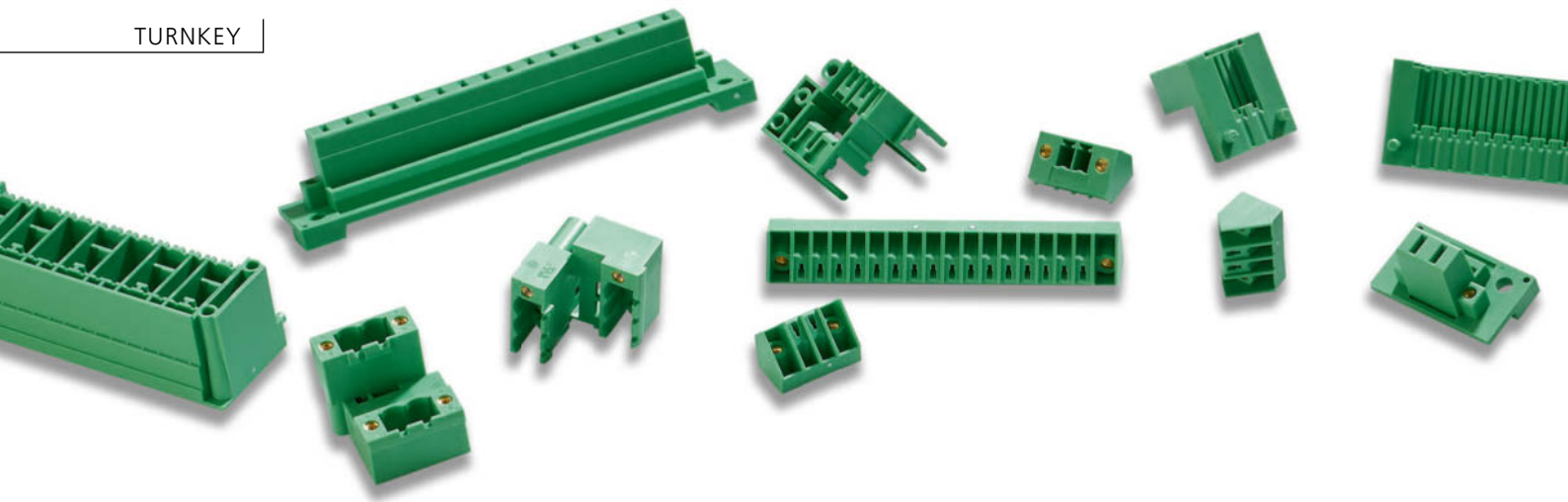
The project has currently achieved the following partial results: FEM models of rib movements have been developed, the transfer of CT models into virtual 3D models and STL data is working, and patient-specific implants can be printed. Eventually, the project will lead to the establishment of a medical 3D printing centre at the Medical University of Graz, Austria, where individual implants, prostheses and moulds – also on freeformers – can be produced centrally.



**Video on
the CAMed
project**

INFOBOX

Name: Medical University of Graz
Project: CAMed (Clinical Additive Manufacturing for Medical Applications)
Task: To develop additive manufacturing processes that enable patient-specific implants for various medical applications to be produced directly in the hospital
Industry: Medical technology
Products: Personalised implants
Contact: www.medunigraz.at/camed



One system, 159 variants

Phoenix Contact: Flexible production concept combines high article variance with automation

At the beginning of 2021, the following question arose at Phoenix Contact: How can we implement high article variance on an automated system with optimised set-up times – with the requirement of solely producing flawless parts that come directly from the system with no finishing work – even without 100 % testing? The answer: with ARBURG!

Phoenix Contact, a German family-owned company with over 20,000 employees and headquarters in Blomberg, describes itself as the global market leader and innovator for electrification, networking, and automation on the path to a smart world. The specifications for the new turnkey plant were correspondingly ambitious: a cycle time reduction of 20 percent across all part variants as well as high reproducibility, accuracy and, at the same time, high efficiency.

Five product families

The company opted to collaborate with ARBURG and use a turnkey solution based around an electric ALLROUNDER 470 A with MULTILIFT V robotic system for the production of 159 product variants: various base strips with flange geometry including overmoulded bushing with internal threads, i.e. metal inserts, for five different product families. The new system was intended to

“reconcile high article variance with automation”, explains Bernd Laumann, Team Manager Injection Moulding Projects PCC in the DC (Device Connectors) business area. He is familiar with the extremely high expectations of customers, especially in the Japan and Asian market. Base strips with different pitches and numbers of poles are used in device connection technology.

Cycle time reduced by 30 percent

With the new machine mould concept, the cycle time requirements are not only met, but far exceeded. The bushings are separated and fed via a Hörmlle system. A Kuka Agilus articulated-arm robot with direct data record connection takes the bushings from the conveyor bowl or web position and places them at the specified positions on the corresponding transfer plate.

Transfer plates and grippers fit the respective mould cassettes, which have one, two or four cavities. Those not currently in use are stored on two gripper trolleys that can be moved to the system for a better change. The bushings are picked up from the transfer plate by the MULTILIFT V, which engages vertically, and inserted into the mould on the nozzle side. At the same time, the gripper on the opposite side removes sprue and moulded parts. The sprue is then discharged via a chute into a sprue mill, where it is regranulated and returned to

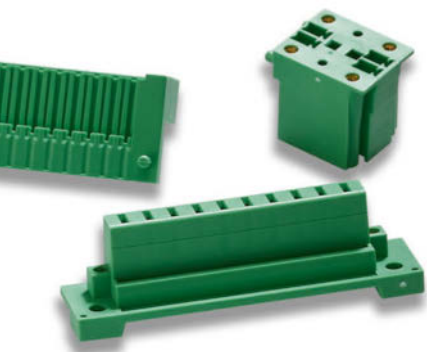
the production process. This is followed by the inductive bushing inspection together with a quality inspection of the parts and ejection into the corresponding transport containers, separated by cavities or mould cavity. In addition, quality is ensured by an internal pressure sensor system that ensures optimum part filling. As part of the start-up process, additional non-standard programs enable the production of plastic parts without bushings in order to optimise the injection moulding process.

Set-up 50 percent faster

The mould cassettes are changed at least once a day, because there are often smaller series to be produced. Two flame-

To enable a quick changeover in the turnkey system around an electric ALLROUNDER 470 A, the transfer plates and the matching grippers are available on two trolleys.

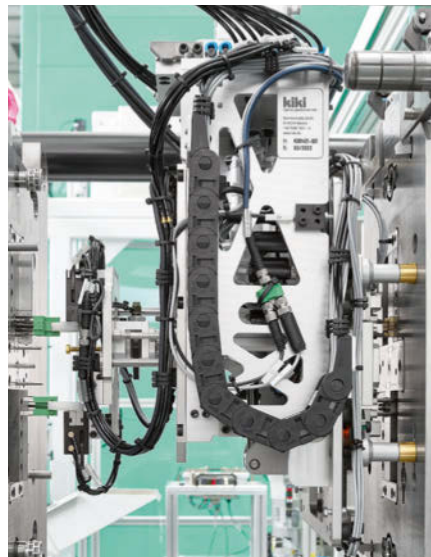




variants

flexible variance with automation





Automated production stations: KUKA loading robot and MULTILIFT robotic system (top left), vibratory bowl for bushing supply (top right), set-down separated by mould cavity (bottom left) and removal of the moulded parts and loading in the mould (bottom right).

retardant materials are processed. Optimised for fast mould and gripper changes on the machine and robotic system, the exchange takes place in less than half the previous set-up time. The quick set-up mould concept was developed in Phoenix Contact's own mould construction facility.

The system's final acceptance test took place after a development period of only 15 months, during which those involved were able to exchange information exclusively via videoconferencing.

"We have a long partnership with ARBURG. We have always been very satisfied and know what we can ask for," says Bernd Laumann, describing the cooperation. "We found a good technical level with them". And Carsten Vogt, Turnkey Project Planning and responsible project engineer at

ARBURG, can only return this compliment: "Phoenix Contact provided us with very good data right from the start, so that we were able to design the system precisely and implement it relatively quickly despite its high complexity." Another turnkey system has already been ordered from ARBURG.

INFOBOX

Name: Phoenix Contact GmbH & Co. KG

Founded: 1923

Locations: Blomberg, Germany and ten other production locations

Turnover: 2.97 billion euros (2021)

Employees: 20,300

Industries: Electromobility, energy, manufacturing, equipment and systems engineering, infrastructure, process industry

Products: Components and systems in the field of electrical engineering, electronics and automation

Contact: www.phoenixcontact.com



Your machine "Ready2Go"

New arburgXworld app: Quick access to ALLROUNDERS

What can help with the supply chain problem? Easy and fast access to standard machines that ensures competitive advantages. Since June 2022, European users of the arburgXworld customer portal have been able to view available warehouse and showroom machines in the new "Ready2Go" app and request offers.

This app currently lists ALLROUNDERS from the GOLDEN EDITION hydraulic series and the GOLDEN ELECTRIC electric series in the standard basic versions, to which additional fixed options can be added if required. Besides new machines, the app also lists refurbished machines and showroom machines. These include ALLROUNDERS that have been deployed at ARBURG, for example during in-house production, at trade fairs or in the Customer Center. The "Ready2Go" range is supplemented by robotic systems

such as the INTEGRALPICKER V and MULTILIFT SELECT.

ALLROUNDER in three to four weeks

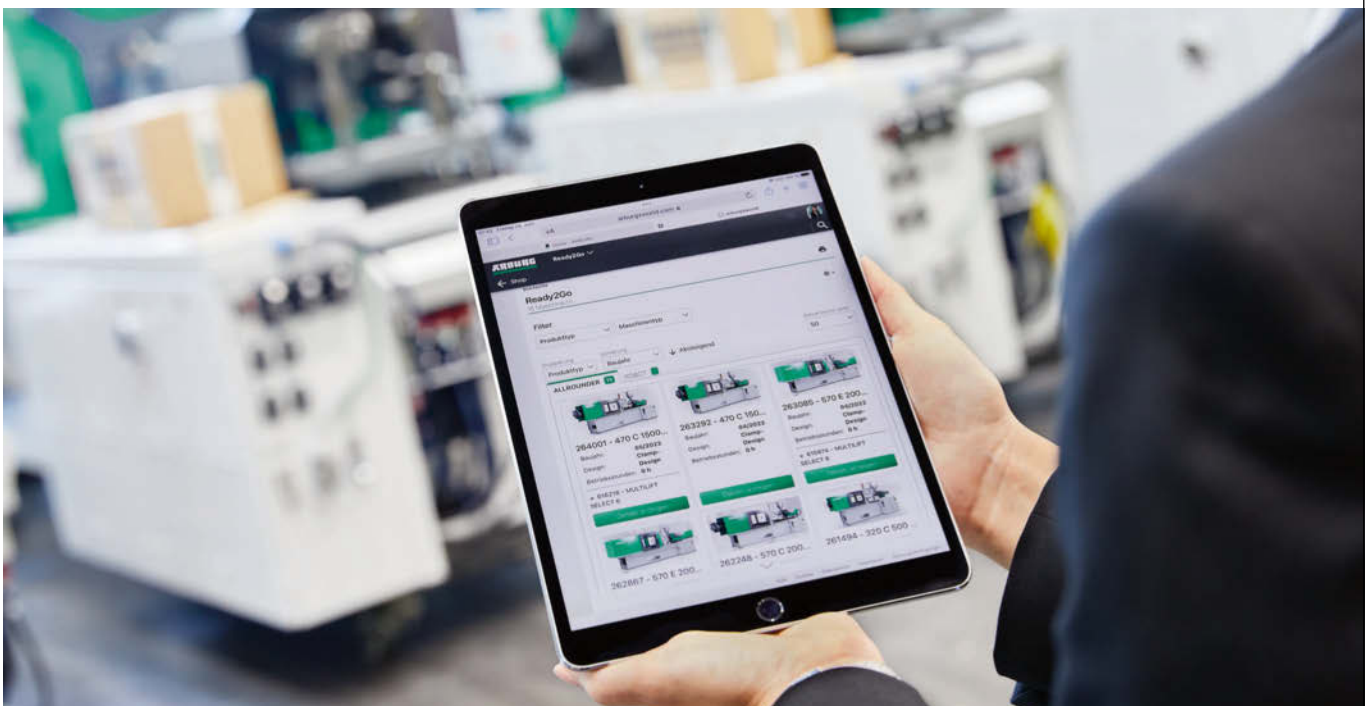
Commenting on this new digital offering, Gerhard Boehm, Managing Director Sales and Service, says: "This innovative measure means that our customers can obtain a machine adapted to their requirements very quickly, within just three to four weeks. In times of supply bottlenecks worldwide, this is an essential factor in being able to offer our customers a shorter time-to-market."

arburgXworld users have an advantage

Available machines and systems are unlocked in an overview in the "Ready2Go" app for European arburgXworld users. They log into the customer portal as usual, select a machine and can start an enquiry directly to receive their individual

offer. Once the order has been finalised, the ALLROUNDERS are customised at the ARBURG headquarters in Lossburg. In future, the "Ready2Go" overview will also be available to all ARBURG customers via the website.

The "Ready2Go" app provides an overview of currently available ALLROUNDERS.



Cool cups for

Bockatech: Sustainable, lightweight and recy

This product has the makings of a classic. Manufactured on an ALLROUNDER using Eco-Core technology from Bockatech, the cost-effective returnable cup has the potential to be a game changer in terms of sustainability. An end to the estimated 600 billion disposable cups worldwide each year.

“At the COP 26 United Nations Climate Change Conference, world leaders – including the US and French Presidents, Joe Biden and Emanuel Macron – were introduced to the first generation of lightweight EcoCore cups,” Bockatech Director Martin Blacher proudly reports.

Can be used hundreds of times

“There is now a completely new type of cost-effective returnable cup that can be used hundreds of times and is even lighter than the common disposable paper alternatives,” Martin Blacher continues. With an insulating wall thickness of two millimetres, the cup keeps hot coffee comfortably warm and reduces condensation on the cup’s outer wall for cold drinks.

This innovative lightweight returnable cup, which weighs only 14 grams with a capacity of 430 millilitres, was produced by

The foamed returnable cup can be produced with or without an IML label (pictures right). A special gripper was developed for its robotic system and manufactured additively with the freeformer (picture left).

hot drinks

able returnable cups with a promising future

ARBURG for the first time at the Technology Days in June 2022. For Drinktec in September, an IML system was also integrated to finish the cups. In addition to Bockatech, other partners involved in the project are Borealis (material), Trexel (MuCell technology), MCC Verstraete (IML labels) and Robo-plas (IML automation).

50 percent lighter thanks to foaming

The patented EcoCore technology is the result of a combination of innovations relating to materials and processes together with product and mould design. The products manufactured with it are light, well insulating, robust, durable and cost-effective. Thanks to their skin-foam-skin wall, EcoCore products are typically up to 50 percent lighter than comparable non-foamed products. Another key benefit of the EcoCore technology is the short cycle time – only 5.5 seconds for the returnable cup, including removal by the MULTILIFT SELECT robotic system. What's more,

the moulded parts can be produced with high rigidity and low distortion.

Microcellular foam structure

The cups are produced on a hydraulic ALLROUNDER 470 S with GESTICA controller, MuCell package and special plasticising screw. There is also a P-series Trexel system for packaging applications. The PP base material is enriched both chemically with blowing agent (CO₂) and physically with nitrogen using the MuCell process. This homogeneous solution is injected into the mould via a hot runner with needle-type shut-off nozzle. After injection, the mould opens and the component foams up. The foaming is controlled by the design of the component wall and the cooling. The foamed wall thickness is two millimetres, almost 4 times greater than what it was at the beginning of the process. The resulting skin-foam-skin structure with fine-celled foam cells of diameters be-

tween five and 50 micrometres is ultimately crucial for the cup's low weight, great strength and thermal insulating properties.

Additively manufactured gripper

A highlight of the Technology Days system is the gripper additively manufactured with the freeformer, which saves weight and costs. The gripping function with air guidance was integrated into the component using a combination of hard and soft material, without any additional pneumatic drives or valves. Innovative, like the entire system for producing the EcoCore returnable cups.



Video
Application



INFOBOX



Name: Bockatech Ltd.
Founded: 2015
Locations: Mid Glamorgan and Wyton, United Kingdom
Employees: Nine
Business area: EcoCore technology for packaging
Contact: www.bockatech.com

Under one roof

ARBURGadditive: Broad spectrum, concentrated expertise

ARBURGadditive GmbH + Co KG was founded last year and is headed by Managing Director Dr Victor Roman. After seven months in office, he reports on the company's background, its current status and his visions in an interview with today's editorial team.

today: What is behind the founding of ARBURGadditive?

Dr Victor Roman: We set the company up so that our activities in the area of additive manufacturing could be bundled together,

advanced in the long term, and presented to the market in a transparent manner.

today: What exactly does transparency mean here?

Dr Victor Roman: We want to make it clear that the freeformer and the 3D printers from innovatiQ, which have been part of the ARBURG family since 2020, effectively belong together or perfectly complement each other.

today: What are the benefits for customers?

Dr Victor Roman: ARBURGadditive offers everything from a single source and has a suitable solution for every requirement, both in technological and economic terms – from innovatiQ 3D printers that process filaments to freeformers for producing functional components from original thermoplastic and elastomer granules. Added to this is the innovatiQ LiQ for industrial silicones.

today: Can you also tell us what is being planned behind the scenes?

Dr. Victor Roman: (grins) Not everything, but a little bit, sure. Internally, we will continue to bundle development competences, for example, both in terms of software and hardware, and will certainly also use synergy effects to pursue a common parts strategy.

today: And what are you planning externally?

Dr Victor Roman: In the medium term, we will further expand our consulting services.



At the ARBURG headquarters in Lossburg, benchmark parts can be produced on freeformers and 3D printers from innovatiQ.



es for customers and interested parties, for instance by not only manufacturing benchmark parts, but also providing support with AM-compatible product design. There is still a lot of untapped potential in this area.

today: Speaking of potential: Which industries play a role here?

Dr Victor Roman: Currently, the aerospace, transport, industrial technology and, of course, medical technology industries are driving additive manufacturing.

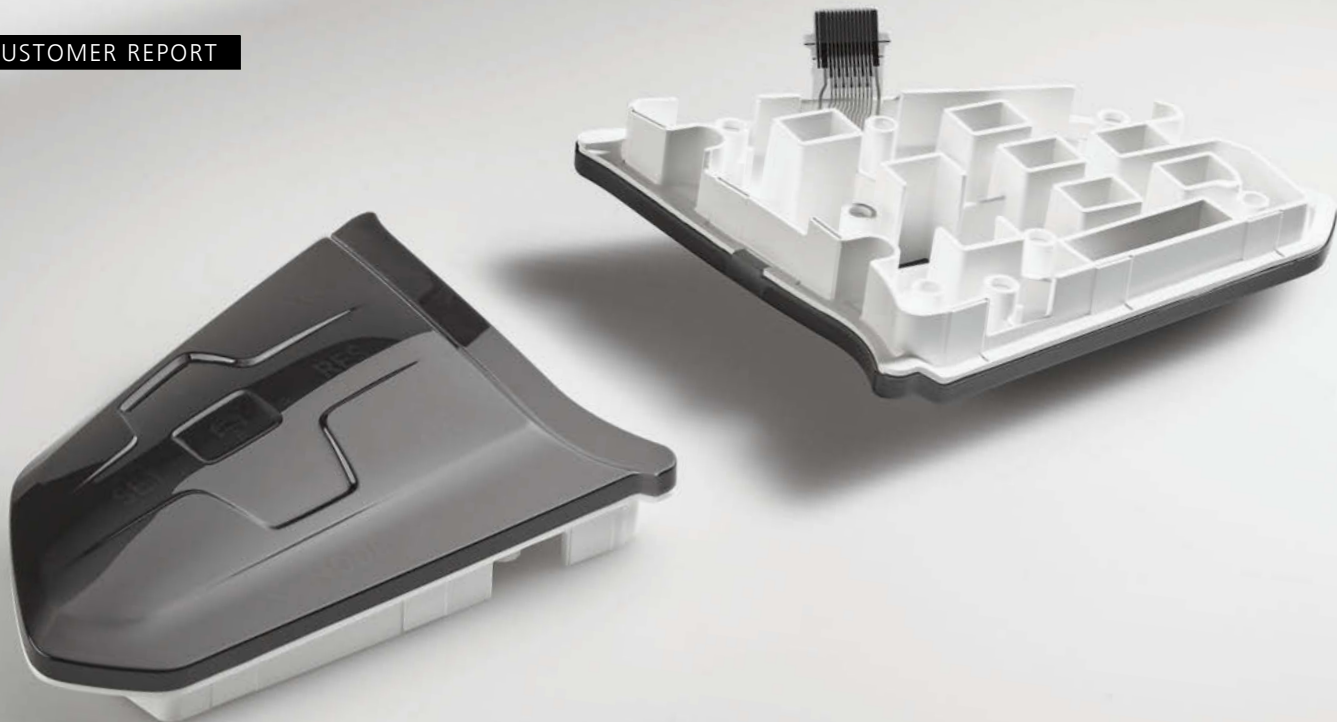
today: And what will things be like in the future?

Dr Victor Roman: The AM market has grown rapidly in the last decade and, in my view, will continue to grow at the same pace or even faster. I think that in about 20 years, additive manufacturing will be present in every production process, regardless of the industry.

today: It's clear that you're passionate about the AM sector. Was that also the reason why you joined ARBURGadditive?

Dr Victor Roman: I can answer this question with a resounding "yes". I can make a lot of things happen here in an environment that combines high-tech, competence and trust. Thanks to this philosophy, ARBURG has maintained its leading position in the global injection moulding world for decades – which spurs the ARBURGadditive team on, of course!

Dr Victor Roman, Managing Director of ARBURGadditive, is proud of the current product portfolio and is also looking forward to new challenges.



Full overview

BCS: Pilot customer for ALS Track and Trace module

Safety is a highly sensitive area in the automotive sector, and is also the focus of special solutions for vehicle interiors produced by BCS Automotive Interface Solutions GmbH. ALLROUNDERS are used in production for parts manufacturing. Then there is the important, innovative area of traceability.

The company from Radolfzell, Germany, is a pilot customer for the new ALS Track and Trace module which is used in the new film insert moulding (FIM) production area. The module records and visualises process data during the multi-stage production of two defined moulded, printed and in-mould-laminated steering wheel controls that are used on the left and right in a multifunction steering wheel for passenger cars.

Eight steps, six cells

The in-mould lamination of the film, which not only contains the design but also

the data matrix code (DMC) for tracking purposes, is carried out using an automated electric two-component ALLROUNDER 630 A. A total of eight work steps are required to produce the steering wheel controls: screen printing, cutting to size, high-pressure moulding, curing and punching the films, in-mould lamination, bonding the sensor film for the touch function, and the final ultrasonic welding. These take place in six production cells that are not interlinked.

BCS's goal is "single part tracking", i.e. logging the process data of each identifiable individual part for each production step in the value chain and being able to retrieve it at any time. What's more, after the first work step, each sub-

sequent production line must be able to query on a part-specific basis whether the previous production step was successful –

From injection moulding to traceability: Wolfram Speck, Head of Manufacturing Engineering at BCS, is enthusiastic about ARBURG solutions.



Photo: BCS



Eight steps are required to make the steering wheel controls (large picture left). The intermediate products (small pictures) can be identified at any time. From screen printing the film (1), high pressure moulding (2), curing and punching (3), in-mould lamination (4), bonding the sensor film (5), and ultrasonic welding to the finished part (6).

a comprehensive solution for production control and documentation within the ALS for a complex production process.

Seamless documentation

As a system partner, ARBURG provides the basis for this huge volume of information with its ALS Track and Trace module. To this end, each part is identified with a unique serial number in each documented process step via the ALS. The production cells send the process data to this module which supplements the parameters with order and other production data and saves this information. The cells can query the data accumulated up to their respective production step via a REST interface in the Track and Trace module and evaluate it accordingly. The REST API allows data exchange from machine to machine via the MES. This allows different systems and devices to be connected to each other and to speak the "same language".

After production, the complete production data of the individual parts are

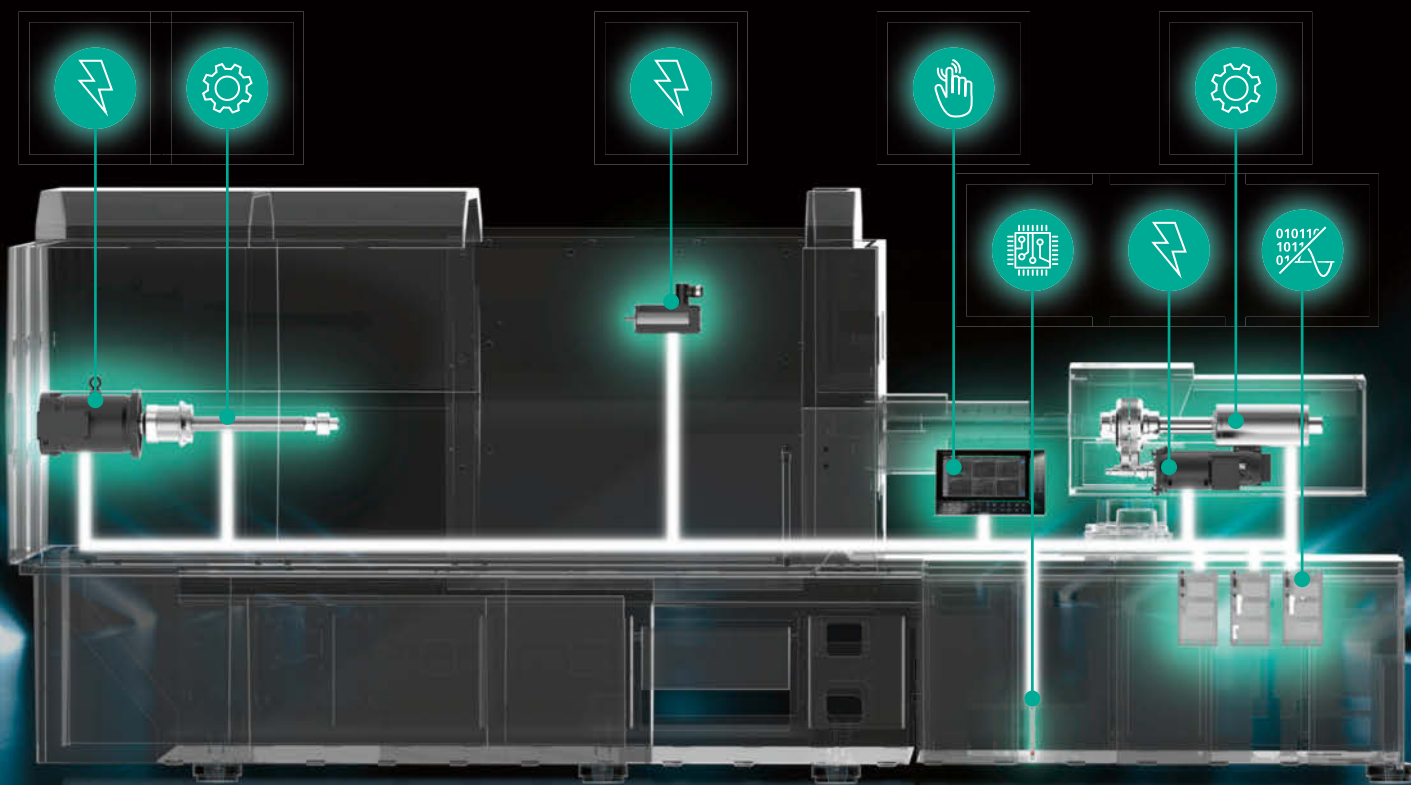
available in the ALS and can be selected and displayed in a full-text search using various filter specifications such as order, article, mould, and machine. This clearly documents the process data of each production step for each part – for complete production traceability. Wolfram Speck, Head of Manufacturing Engineering, has this to say about the use of the Track and Trace module at BCS: "After its successful integration in the FIM production area, we will investigate whether other production departments such as Electronics and Final Assembly can be integrated. In the long term, we could even think of using ALS as an MES throughout the plant."

INFOBOX



Name: BCS Automotive Interface Solutions GmbH
Founded: Independent subsidiary of Luxshare Limited, China, since May 2018
Locations: Radolfzell, Germany, and others in China, Italy, Mexico, Romania, Czech Republic, US.
Employees: 3,600 worldwide, 630 in Radolfzell
Industries: Electronics, sensor technology, automotive
Products: Electro-mechanical controls, intelligent sensors and touch-sensitive surfaces
Contact: www.bcs-ais.com

KNOW-HOW
RELIABLE DELIVERY
POWERTRAIN
SOURCE OF
INDIVIDUAL POWER
IN-HOUSE PRODUCTION
FLEXIBLE
SUSTAINABLE



WIR SIND DA.

The backbone of every injection moulding machine is the drive train. When it comes to cost-effectiveness, i.e. performance, durability and efficiency, everything has to be right. And exactly here you can rely on our overarching competence. We are simply unique. Because all the hardware and software is within the ARBURG family. Our benchmark fits perfectly – ensuring your success!
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