

## EDITORIAL



*Philipp Bayat, Dr. Monika Bayat, Heinz Bauer  
(l. to r.)*

Wide coverage throughout the media and current political debate are clear signals that the topic of climate change has now arrived at the heart of society. Solving its problems will require exceptional efforts by us all. As a family-run globally operating technology company, we think from generation to generation. Reducing the environmental footprint of our business activities as far as possible is therefore a particularly heartfelt concern for me and my whole family. After working towards this goal for some years, we have now received fresh impetus from our successful completion of environmental management certification in accordance with ISO 14001. We will continue to consistently pursue and develop this strategy, integrating our partners into our activities along the way, to establish BAUER as a future-facing company in this field.

Heinz Bauer,  
Dr. Monika Bayat,  
Philipp Bayat

## BAUER KOMPRESSOREN BAUER'S INTERNET OF THINGS



*Always in the picture with B-CLOUD*

For BAUER customers, the new B-CLOUD platform represents a quantum leap in terms of convenience, safety and security in system operation. All stationary compressor and gas measurement systems with latest-generation B-CONTROL MICRO+net control units can transmit their operating data to B-CLOUD, where customers can access them at any time from a smartphone or computer. Seamless end-to-end condition monitoring enables key data including temperature, operating pressure, oil pressure, filter cartridge saturation and gas measurement values to be kept in view at all times, virtually in real time and anywhere in the world, regardless of a system's physical location. Maintenance works such as an upcoming filter cartridge replacement or fault alerts like loss of oil

pressure are announced in good time in the form of plain text messages. In addition, gas measurement data can be archived securely in B-CLOUD and are automatically sent to the customer in a monthly PDF report. The option of transmitting and archiving gas measurement data to the cloud also benefits owners of earlier-generation systems with B-DETECTION PLUS systems for continuous air quality monitoring. In addition, B-CLOUD offers the option of automatic software updates to ensure the connected systems are up to date at all times. A further option boosts operator safety and security by allowing system owners to release their operating data to a BAUER service partner. Based on the data transmitted from the system or device, the service partner can suggest appointments for

maintenance works or draw up full-scale maintenance plans. Help is on hand fast when it is needed, and remote monitoring saves time and costs by eliminating the need for technicians to travel.

All data transmission from and to B-CLOUD takes place under strong end-to-end encryption. In these times where cyber attacks are an ever-growing risk, BAUER has made data security and compliance with EU-GDPR its foremost concern. ■

## BAUER KOMPRESSOREN ECO CREDENTIALS



*BAUER is committed to the environment*

To mark BAUER's successful completion of ISO 14001 environmental management certification, the Managing Director of TÜV SÜD Management GmbH personally presented the certificate to Dr Monika Bayat, owner and Managing Partner of BAUER.

BAUER has consistently pursued the goal of increasing sustainability in its operations for many years. As early as

1995, the company opened a public fuelling station for eco-friendly CNG-powered vehicles at its premises at the time. Given the challenges presented to us all by climate change, Dr Bayat has made it her personal mission to consistently reduce BAUER's ecological footprint.

Today, practising sustainability is embedded in the company's corporate philosophy as a technology leader in the mechanical engineering industry. Mindful of this responsibility, in 2020 BAUER embarked on the ISO 14001 certification process with the goal of recording, evaluating and continuously improving the specific environmental impact of its operations and its compliance with the relevant environmental laws and regulations. Cross-departmental training sessions provide support for the employees in reaching the goal of aligning the company's operations and activities with consistent sustainability. After all, the foremost customers for this management system are the company employees themselves. They need to understand the requirements of the management system, accept them and bring them to life. Without their active involvement, there can be no waste separation and sorting, no energy efficiency and no water consumption optimization.

The wide-ranging package of actions already taken or planned for the immediate future underpins and guides the continuous improvement process. It includes increasing energy efficiency in buildings and production processes, avoiding environmentally harmful materials, boosting the proportion of recycled material in products and packaging and, not least, changing the company's vehicle fleet over to climate

neutral mobility step by step. TÜV SÜD's certified and impartial auditors investigated BAUER's conformity with the standards and have issued confirmation in the form of the ISO 14001 certificate. ■

## BAUER COMPRESSEURS FCC 6 CONTROL DESK

BAUER's French subsidiary, BAUER COMPRESSEURS, launched its brand-new FCC 6 control desk at the end of September.

Developed for the field of gas-assisted injection moulding, the desk delivers further gains in efficiency, user-friendly operation and safety for production processes in the plastics industry. Gas-assisted injection moulding (GIT) is a parts manufacturing process in which nitrogen is injected into molten plastic to create defined hollow tubular



*Precision „Next Generation“*

sections before the material hardens. The plastic parts thus produced are lighter, yet offer better stability. The technology is used in areas such as the automotive sector for manufacturing a range of parts including dashboards and wing mirrors. To ensure the high quality of the finished product, the injection process and gas dosage must be controlled with rigorous accuracy.

The market-leading FCC family of control desks developed by BAUER COMPRESSEURS for this purpose have been used in the global plastics industry for 25 years. Now in their sixth generation, they feature a ground-breaking design based on the new VERTICUS series and offer ultra-simple intuitive operation via a new-design 10-inch colour touchscreen display.

With an intuitive graphic user interface and dedicated command keys, the desks are extremely straightforward for even new users to operate. The FCC 6 also has an array of further innovative features, with real-time remote diagnosis via a secure encrypted Internet connection as a brand-new core function. Current values plus the previous 100 cycles are tracked and dis-

played for ongoing quality monitoring. As an added option, all process results can be securely saved internally via Ethernet on a CF card or USB drive for later tracking at any time. ■

## BAUER COMPRESSEURS CLIMATE PROTECTION

The BAUER Fuel Gas project team's new biogas fuelling station in Ploërmel, north-west France, successfully started operations at the beginning of July. The station now provides access to sustainable and low-emission fuel for gas-powered vehicles at the heart of the departement of Brittany.

The CS26.10-DUOII system was developed as a partnership between BAUER's French subsidiary, BAUER COMPRESSEURS, and a well-known biogas system manufacturer. Housed in a weatherproof container, it has a power output of 2 x132 kW and two high-performance water-cooled BAUER BK26 compressor blocks. After desul-

phurization and dehumidification, the biogas – now in natural-gas quality – is compressed to 300 bar. Integrated high-pressure storage banks provide gas reserves for safe, secure and fast refuelling around the clock. The control system keeps all the main system parameters in view. Maximum ease of servicing was the main watchword for the engineers who created the design and interior layout of the system. ■

## BAUER COMPRESSORS MOBILE C26 XXL-SYSTEME

The new C26 XXL mobile CNG system from BAUER's US subsidiary, BAUER COMPRESSORS INC. (BCI), is the realization of an exceptionally versatile and flexible concept that is accordingly generating enormous interest in the CNG sector. In early October the second mobile CNG system of this kind was supplied to customer Cleancor LLC for use with its existing CNG stations, expanding fuelling capacity by adding the option of liquid natural gas (LNG) fuelling. The first system is in operation in Palm Springs, California. Here too, the local energy supplier uses the system to make up the supply shortfall from the existing gas pipeline. Once pipeline capacity is expanded, a new stationary BCI C52.12 X-Fill™ system will be placed into operation. Thanks to its mobile design, the existing C26 XXL can then simply be transported to another location to start operations there. Originally designed for pipeline evacuation, the XXL™ CNG system is designed



*Biogas fuelling station in Ploërmel*

*Flexible high performance from the new XXL™ CNG system from BAUER COMPRESSORS*



## UNICCOMP ROBOTICS

for ultra-flexibility and versatility, with a combination of BAUER ROTORCOMP® EVO9-NK screw compressor with a BAUER C26.12 high-pressure booster compressor. The two systems can be operated independently or in conjunction to maximize adaptability. Applications for the system include advanced specialist applications such as pipeline turn-arounds and virtual pipeline mother/daughter stations. All the elements needed for operation are installed directly in the container, including the electrical control unit. The transportable XXL™ system is a plug-and-play solution that can be set up on site in a few hours and immediately placed into operation after connection to an external power supply and gas line. The remote connection to BAUER's cutting-edge CONNECT® IOT system provides secure and convenient monitoring and remote control of the system in real time. ■

B-NEWS 1/2019 presented a detailed report about “DAVID”, the first robot to go into operation at UCC. In 2020 the robot notched up 1,770 production hours installing parts in CTX400 CNC machines. The pilot project was an overwhelming success.

“Robotics is a very personal passion of mine – but it’s also vital in getting our company fit for the future. My goal is to build up expertise in this field in the company to ensure our use of the technology is cost-effective. I established the I<sup>2</sup>4.0lab unit to achieve this and was lucky enough to recruit Stefan Fuchs as the ideal head”, enthuses Roland Beckert. Stefan Fuchs has been with UNICCOMP since 2016 and has headed the robotics division there for the past two years. As an intern and later a work placement student, Stefan Fuchs had already amassed vital experience in the field of work preparation and production

technology before graduating with a Bachelor’s in Engineering. His graduation thesis, entitled “Optimization of information processes in production operations”, provided valuable impetus for enhancing efficiency at UNICCOMP. Fuchs moved to Production Technology in 2018, and has been intensively engaged with the I<sup>2</sup>4.0lab since 2019, working with his students and with committed support from Roland Beckert. “The work is so varied. Every day I encounter new experiences and findings, and creative problem-solving is constantly required”, he explained in an interview. Working with two or three students, he uses additive manufacturing methods – or, more familiarly, 3D printing – to develop and produce the necessary grips and tools independently, with Roland Beckert providing exemplary encouragement and challenge.

The brief for the “Green Cartridge” project required cartons for the unmachined parts that cost no more than an “egg box” – low-cost and process-capable. This involved automated pick-up of the cartridge, laser labelling and finally, sorting and packaging in the box. Using COBOT was a useful and economical method of automating the repetitive task. “One of our aims is to assign



*Stefan Fuchs checks a rotor housing on the collision-free deburring line*

as many tasks as possible in the company to COBOT – a mobile collaborative robot. This enables the robot to be used to maximum capacity, preferably even in three shifts”, says Stefan Fuchs.

There are still many challenges along the way; for instance, there are plans to use the robot to remove or “pick” unordered parts from a bin. Multiple cameras are needed to ensure the robot can identify the parts in three dimensions. A complex algorithm then calculates a collision-free path for the picking operation. “A Master’s student from the UK assisted with the programming and identified potential solutions in his thesis”, says Fuchs, delighted at the international collaboration. As he is the first to admit, he has a “really cool job”. i240lab is an important milestone in developing modern, flexible and cost-effective automation solutions that will ensure UNICOMP is fit for the future. ■

## BAUER KOMPRESSOREN NEVA TRADE SHOW

For BAUER KOMPRESSOREN, the biennial NEVA trade show held at St Petersburg’s ExpoForum is a regular date in the company’s event diary.



Success with tailored solutions at the NEVA trade show

The 16th international shipping exhibition and conference was held between 21 and 24 September 2021 and attracted over 25,000 trade visitors, 30 international delegations and 550 product exhibitors. Packed booths and halls were a clear signal of the industry’s readiness to go full steam ahead as the end of the Covid-19 pandemic hoves into sight.

With offices and manufacturing operations based in the region plus a broad product portfolio and engineering capacities, BAUER has established an excellent position in the industry. At NEVA, the company joined forces with its Russian partners in the breathing air sector, AQUAIRY and TETIS PRO, and SHIP SYSTEMS in the industry sector to communicate a strong presence. At the AQUAIRY partner stand, local subsidiary BAUER KOMPRESSOREN RUSSLAND showcased its brand-new transportable NEPTUN breathing air compressor, with free air delivery of 200 to 330 l/min covering a wide range of applications. Interest from the visitors to the trade show was accordingly high. The NEPTUN is based on the highly successful POSEIDON EDITION and is the first model to be tailored to the Russian

market. It is produced locally at the Moscow plant. Further “Made in Russia” products are in the development stage. In the industry sector, BAUER’s partner SHIP SYSTEMS presented the company’s range of large-scale compressors designed for maritime use. The water-cooled BK 26 and BK 52 compressors, uniting stellar technical perfection and ultra-compact design, are particularly popular for shipbuilding applications. And nitrogen generators developed as packages in partnership with SHIPSYSTEMS, represent a further important and successful product area. ■



NEPTUN – produced locally in BAUER quality

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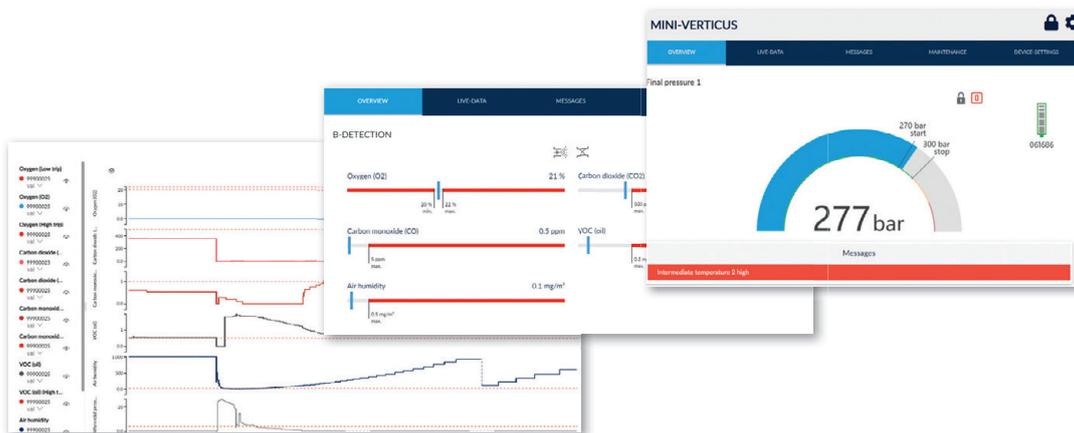
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## DID YOU KNOW?

### How B-CLOUD works



B-CLOUD is based on the concept of providing system operators with continuous end-to-end monitoring of the status of their system and the quality of the air or gas it produces. B-CLOUD optionally includes connection of the system with the local BAUER service partner or BAUER itself, enabling operators to benefit from prompt automatic provision of services without delay. To do so, the compressor system's B-CONTROL+Net new-generation control unit is connected to B-CLOUD via a DLS router or company network, either by Ethernet cable or via B-Link/wireless 4G, which transmits the system data via a secure end-to-end encrypted Internet connection. Strict security standards are in place for authentication, communication and identification. The term "B-CLOUD" describes a storage facility in a highly secure data centre located in Western Europe. This, and the SSL encryption method used, ensure fullest compliance with the strict requirements of the EU's General Data Protection Regulation (EU-GDPR). The data transmitted to the B-CLOUD are securely saved, evaluated and presented in graphic form before being displayed in real time on the computer, tablet or smartphone of the customer and the service partner. To use the full scope of functions offered by the B-CLOUD, operators must first allow the connection to B-CLOUD in the control unit, then authorize their ser-

vice partners to access the system. Login is password-protected to effectively prevent unauthorized third-party access. Now authorized users can check the main compressor and gas measurement data for their system in clear graphic displays extending up to 90 days previously. In addition, system operators are sent push messages notifying them of system alerts or faults and automatically receive the latest software updates. They can also allow access to their B-CLOUD for service partners, benefiting from low-cost fault repair by telephone, streamlined maintenance planning and prompt delivery of maintenance and spare parts. B-CLOUD is ready for the future, with smart sensors and artificial intelligence for automated diagnosis, predictive maintenance and remote maintenance and support. And thanks to automated prompts for purchasing spare parts and consumables from BAUER's online shop, system operators will never need to worry about breakdowns from maintenance backlogs.

Heinz Bauer