

EDITORIAL



*Philipp Bayat, Dr. Monika Bayat, Heinz Bauer
(from left to right)*

This year we are proud to celebrate the 70th anniversary of BAUER KOMPRESSOREN.

Over the past seventy years, our family-owned and managed company – now in the third generation – has developed from a small-scale post-war operation to a leading global player in the international field of high-pressure systems technology. It's a success story that most medium-sized companies would be hard put to match! In this and the next issues of B-News, we invite you to join us on a journey back in time over the past seven decades of BAUER. At the same time, you can explore our new, exciting applications and innovative products. We hope you enjoy reading B-NEWS!

Heinz Bauer
Dr. Monika Bayat
Philipp Bayat

BAUER Technology in Action GEOTHERMAL PROJECTS

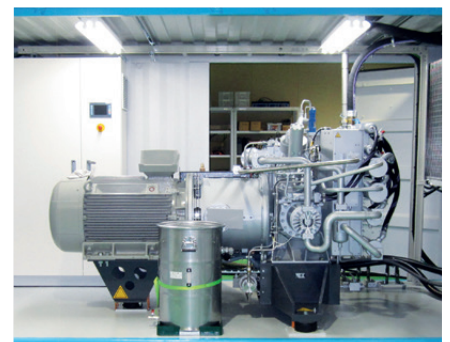


The plumes of steam show that eco-friendly geothermal energy is being produced here.

Geothermal energy is among the most environmentally friendly sources of renewable energy which we have available to us. Virtually inexhaustible, it minimises visual impacts on landscapes and regions and does not have harmful effects on nature.

Theoretically, the energy stored in the top three kilometres of the earth's crust alone would be sufficient to provide the planet with energy for the next 100,000 years or so. However, the drawback is that the hot water must be pumped to the surface from depths of up to 2,000 metres – quite a technical challenge! The boiling point of a liquid rises in proportion to external

pressure. When water is pressurised, “superheated water”, with a boiling point of over 100° C, is the result. If the external pressure falls this water turns to steam. The “superheated water” comes



Our 26 Series compressor block provides a reliable supply of air to extract the hot water.



Reliable, continuous plant operation is absolutely essential in challenging outdoor conditions.

out of the earth at temperatures of 175°C and more. It is depressurised in a tank and can then be used to drive a turbine directly.

But how is the hot water brought to the surface? Pressurised air is forced into the underground water reservoir through a borehole, and a process known as “airlift pumping” is used to introduce air bubbles and reduce the water density. This mixture of water and air is light enough to reach the surface on its own and creates a continuous stream of hot deep water, which is transformed into steam under ambient conditions. A continuous stream of deep water requires 10 to 20 cubic metres of air per hour at a pressure of 100 bar. Two powerful BAUER GIB 26.7-132 high-pressure

compressors deliver the volumes of highly compressed air which are needed in this process. To transport the compressors around from borehole to borehole wherever they are needed, a container installation is used which enables them to be moved conveniently by truck.

The north of Japan is rich in geothermal hot spots, but is also infamous for its extremes of climate. When choosing their compressor systems, geothermal system operators thus turned to BAUER – because BAUER equipment always does its job reliably around the clock, however harsh the weather conditions. ■

BAUER COMPRESSEURS SAS ANNIVERSARY

BAUER COMPRESSEURS SAS celebrated its 30th anniversary on 1st October 2015, inviting over 50 customers and guests to an event held at its headquarters of Aix-les-Bains in the French department of Savoie.

“Today BAUER France is an innovation driver for gas injection, a supplier

of biogas systems and a specialist in standard and custom solutions on the high-pressure compressor market”, summarises Raffael Kurz, Managing Director of BAUER France.

With a team of 34 employees, BAUER COMPRESSEURS SAS supplies plants and systems to the breathing air, industrial and CNG refuelling sectors and generates annual sales of approx. EUR 8.3 m.

“For the past thirty years, France has been a symbol of continuity in international environments. Established in Paris in 1985, BAUER France has developed into a key pillar of our international expansion operations”, said Dr. Monika Bayat, Managing Director of the BAUER GROUP.

Dominique Dord, Member of Parliament and Mayor of Aix-les-Bains, gave a speech in which he underlined the long-standing trust-based relationship between the company and the region and stressed the importance of BAUER as a high-tech employer.

“In global terms, BAUER France is a company noted for its reliability and high-tech expertise which is outstandingly able to fulfil the needs and requirements of our international custo-



Group photo at the celebrations for the 30th anniversary of BAUER France.

mers”, said Philipp Bayat, Managing Director of the BAUER GROUP.

BAUER currently supplies special solutions catering to the high-growth market for secure biomethane compression and storage.

“At BAUER France, the expertise required for designing and building system solutions is to the fore. Today’s international customers appreciate BAUER France as a reliable and expert partner”, affirmed Heinz Bauer. ■

BAUER KOMPRESSOREN 70 YEARS

High-pressure-journey to the top

This year BAUER KOMPRESSOREN proudly celebrates its 70th anniversary. Over the past seven decades, the Munich-based company – now in its third generation of family management – has developed from a small-scale post-war operation to an internationally leading global player in the high-pressure air and gas compression sector. It’s a success story that not many other family-run companies can hope to match!

A new Corporate Design was developed for the anniversary, featuring a contemporary style that references the dynamic development of the company over the years.

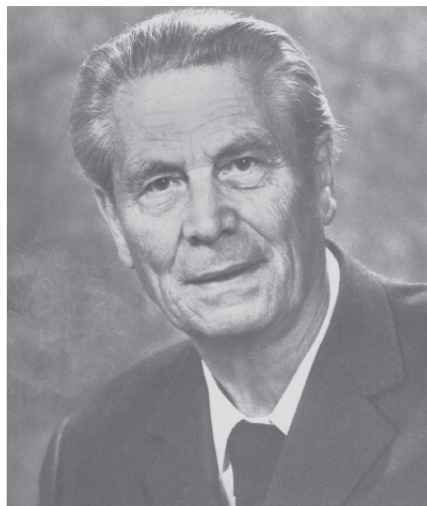
BAUER KOMPRESSOREN has established numerous new locations around the world in recent years – including India, Australia and South Korea – to drive its internationalisation ahead at full throttle. Global expertise, market knowledge and experience are all integrated into the development of new

products and technologies. The best example is probably the new series of CNG refuelling stations, the fruits of a joint development project by BAUER USA and BAUER Munich.

Thanks to its high level of vertical integration, BAUER KOMPRESSOREN is a synonym for quality and reliability throughout the world. The symbiosis of in-house production and development enable innovations to be translated into new products rapidly and smoothly.

The new modern production facilities at the headquarters near Munich, in the USA and in India ensure production operations punctually for the company’s anniversary. With state-of-the-art production technology and expanded manufacturing capacity, they guarantee future-proof operations throughout the coming decades.

At BAUER KOMPRESSOREN, the future is also regarded as an area of corporate responsibility. To reflect this philosophy, the company has successfully marketed environmentally compatible products including refuelling stations for climate-friendly compressed natural gas and biogas (CNG). The



Hans Bauer, company founder and visionary



BAUER’s very first logo, displayed in the 1950s at its location in Wolfratshauer Strasse in Munich.

USA, many European and Asian countries including the United Arab Emirates now rely on BAUER’s technology in this field.

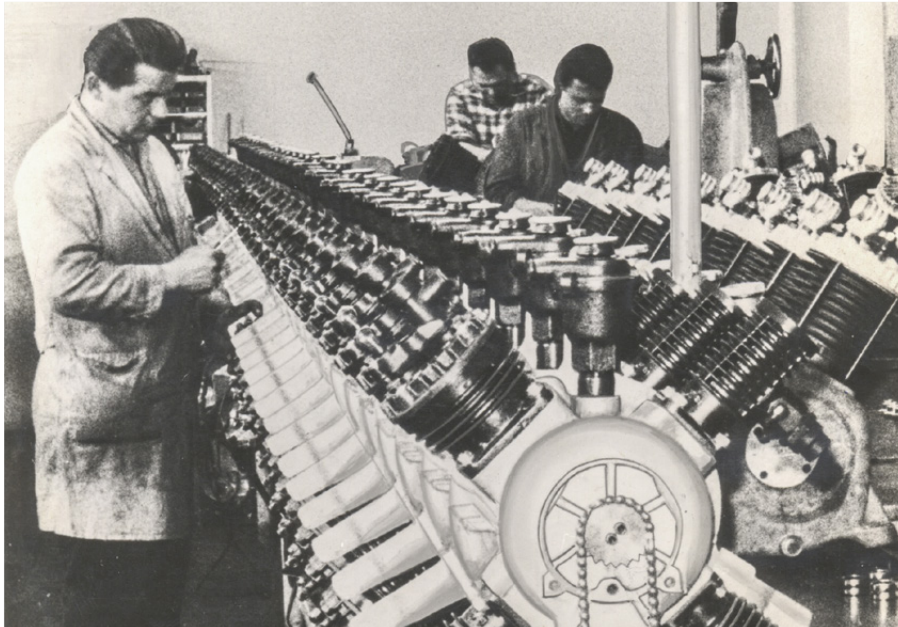
At BAUER KOMPRESSOREN, the course is set for success in the coming decades.

BAUER’s history – Part I

Like many other medium-sized companies in Germany, the story of BAUER KOMPRESSOREN all started shortly after the end of the Second World War – in 1946, to be precise. Only a year had gone by since the end of the war and Germany’s capitulation, and the German economy was facing a new start; it was a time rife with both challenges and opportunities.

Company founder Hans Bauer made the most of the new era by founding his own company. As an engineer at Sendling Motor Factor he had amassed enormous technical expertise; as a person, he was a visionary with unflagging energy. He was quick to recognize the economic potential of compressors and harnessed his expertise as a technical designer, given the similarity between a piston compressor and an engine.

Mr. Bauer started with three staff, setting up his factory on his own property. The first product was a compressor block



All lined up: Assembly of the new four-block high-pressure compressors at the Wolfratshausener Strasse plant.

that could be mounted on the back of a tractor to pump up the tyres even when the farmer was in the field and far from the farmyard. Sourcing the materials was initially a hard task as Germany was still governed by the Allied occupation statute and its economy was in ruins.

In the post-war period, scarce materials like bronze and ball-bearings required for compressor production could only officially be procured using ration coupons issued by the Allies. The black market flourished, with cigarettes and hams often clandestinely serving as “currency” for buying materials from the metal-dealers.

The situation did not change until 1948, when the D-mark was introduced. From one day to the next, materials were suddenly easy to find and finally Mr. Bauer could put his plans into practice.

1950 saw the first major export order, for 50 low-pressure compressors to Greece. Portugal followed with 150 compressors. Construction compressors

were big business; Germany’s cities had been reduced to rubble and needed to be rebuilt. BAUER’s staff grew in step with demand, already exceeding fifty staff by 1956. Further production halls were built in the vicinity; the resulting loose conglomeration of production sites was known among the staff – with affectionate irony – as “United Metal

Works”. From the outset, Mr. Bauer viewed his main strength as uncompromising quality: “I want to build machines that do their job 100%. Every percent less than that costs us ten percent in sales.”

To be continued. ■

BAUER Products and Applications THE NEW AERO-GUARD-OX

Wherever high-volume and cost-effective production of nitrox, the oxygen-enriched breathing gas is required, the choice generally falls on a membrane-based B-NITROX system from BAUER KOMPRESSOREN.

Unlike the blending method, in which oxygen from an external source is admixed until the desired blend is reached, the membrane method produces the gas by withdrawing nitrogen from the intake of ambient air before compressing it to the final pressure using



AERO-GUARD-OX efficiently removes CO2 in nitrox production using a membrane system.

the compressor. However, it is essential to remember that when nitrogen is removed from the air, the remaining air contains higher levels not only of oxygen, but also of CO₂.

Normal ambient air contains an average of 400 ppm of CO₂ – ominously close to the strict limit of 500 ppm which is now also required for nitrox under the provisions of the new Breathing Air Standard, DIN EN 12021: 2014.

Depending on the oxygen content of the gas, a nitrox blend may have a CO₂ content that exceeds the legal limit by anywhere between one-third to over twice as much as the limit set forth in the standard!

The new AERO-GUARD-OX offers reliable protection from overstepping limit values. Its modified bypass system directs 80 per cent of the intake air through a special filter, extracting the CO₂ and reducing the CO₂ content of the filtered air to only 20 per cent of its original level.

Operation couldn't be simpler; when the filter cartridge is saturated, it can



The new PE-MVE Compressor in a stunning aquarium design is a real eye-catcher at the BAUER stand.

be changed in a moment with no need for tools.

AERO-GUARD-OX is designed for free air delivery of 260 – 450 l/min and is thus tailored for use with BAUER B-NITROX membrane systems. The device can also be retrofitted to existing systems, and is urgently recommended for the reasons described above. ■

BAUER Exhibitions BOOT 2016

The boot exhibition in Düsseldorf showed a welcome return to the high visitor numbers of the past.

The BAUER KOMPRESSOREN stand, featuring an all-new design, attracted plenty of attention. The products on show included the debut of the PE-MVE, a soundproofed and extremely cost-effective stationary system with FAD of up to 300 l/min. Visitors were enthusiastic about the new system – and about the “aquarium” look of the side doors, causing passers-by to take a closer look.

As the interest in the B-DETECTION equipment series clearly showed, the topic of breathing air quality monitoring is growing in importance. During compressor operation B-DETECTION BASIC and MOBILE continuously monitor compliance with the limit values for carbon monoxide (CO), carbon dioxide (CO₂)



The Breathing Air Quiz, held at the Diving Tower in Hall 3, tests the specialist knowledge of visitors to boot.

and oxygen (CO₂) from the Breathing Air Standard DIN EN 12012:2014. In addition, the high-end B-DETECTION PRO model offers further features including pressure dew point measurement to monitor the humidity of the compressed breathing air.

The new B-BLENDING System is also a magnetic attraction for visitors to the BAUER stand. The high-precision system produces nitrox blends with up to 40 per cent oxygen content, which are then compressed up to 220 bar by a BAUER NITROX Compressor (at boot, this was a mobile MARINER 320 system) in perfect safety – confirmed by TÜV quality certification – before being stored in cylinders. BAUER provided a safe, secure supply of breathing air for the Diving Tower throughout the exhibition.

It's an exciting experience for visitors to the boot exhibition when they take their first dive in the Diving Tower using breathing equipment. Everything must function 100%, including the quality of the breathing air! To ensure this

is the case, the organisers of boot had once again commissioned BAUER, the market leader in breathing-air compressors, to provide breathing air.

Peep holes allowed spectators the chance to see the staff filling the air cylinders from the BAUER PE 400-VE breathing air compressor. A large information display highlighted the importance of flawless-quality breathing air in line with the DIN EN 12021:2014 standard. Visitors could then test their newly acquired knowledge in the Breathing Air Quiz. In four prize draws held at the Diving Tower, a total of twelve high-quality BAUER Dive bags packed with a range of accessories went to lucky winners. ■

BAUER Products and Applications CNG

For over thirty years the manufacture of turnkey CNG refuelling stations has



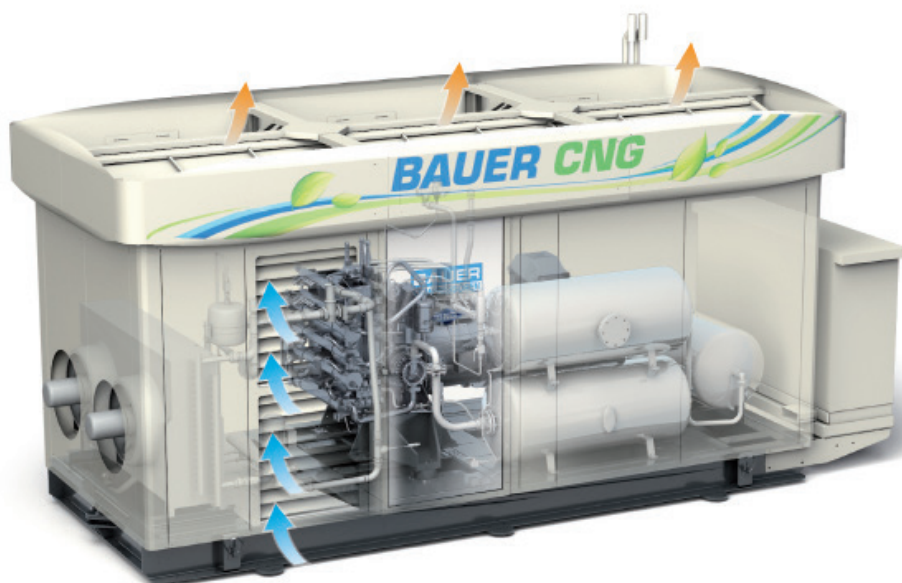
The plant tour offers visitors interesting insights into the production of CNG compressor blocks.

been a major area of core expertise at BAUER KOMPRESSOREN. To mark its 70th anniversary, the premium producer of high-pressure systems and global leader on the breathing air compressor market presented an all-new series of compressors which had been designed in a joint development project by engineers in Munich and at the company's US location in Norfolk, Virginia.

The objective of the project, which extended over almost two years, was to design an extra-slim and compact housing for BAUER's proven systems technology. The development team therefore used sheet steel instead of concrete as the material for the housing. As sheet steel is easy to work, a further benefit from the choice of material was the possibility to create particularly harmonious modern designs.

The 70th anniversary of BAUER KOMPRESSOREN was the perfect setting for the debut of the new series – 22nd October was the big day.

The first systems in the COMPACT and X-FILL series were presented before an exclusive audience of experts from the CNG industry at BAUER PRODUCT DAY 2015. The event was held on the premises of the newly opened production plant at Geretsried,



BAUER's new X-FILL series – the perfect combination of compact design and high performance.



Stefan Borrmann, Product Manager FGS, provides in-depth information on the brand-new X-FILL series.

south of Munich, enabling guests to take part in a tour of the ultra-modern high-precision manufacturing facility located in the new production halls. The team – headed by Oliver Kühner, Director Fuel Gas Systems – held various detailed talks informing their forty guests from Germany and abroad of the advantages of the new series in its new, sleek and compact metal housing.

The COMPACT Series was successfully launched in February. Eight systems from the series, which is designed for refuelling cars, have been placed into service since sales operations started.

But the star of the event was definitely the new X-FILL Series, delivering up to 132 kW of power to refuel buses and trucks rapidly and efficiently. Oliver Kühner also provided a look into the future, mentioning the new M-SERIES of compressor systems still in the development stage.

At the current planning status, they will be launched by the end of 2016. With up to 40 kW of installed power, they are positioned between the COMPACT and X-FILL Series and are designed for refuelling cars, but also bus and coach refuelling operations without large-scale fuel needs. Guests

were then invited to experience the COMPACT and X-FILL systems in a series of live demonstrations held in the event marquee before taking a tour of the brand-new production facility.

Immediately after the event was over, the systems went on tour to the 11th Gasmobilsymposium in Switzerland where BAUER has an extensive presence there with almost 60 re-fuelling stations; discussions clearly showed that BAUER's new concept has proved ideal for meeting the needs of the industry. ■

BAUER ACADEMY PROGRAMME 2016

The Technical Training at the BAUER ACADEMY has revised and expanded its programme of training courses for 2016. The programme is now available in two languages and a total of four versions.

In addition to the previous public training programme for customers, two extended versions were drawn up for our subsidiaries and A partners. New courses, some of which are available as webinars, have been added to reflect users' practical needs.

The new programme, featuring the new Corporate Design, represent a further stage of professionalism in our customer training to provide added value for our customers and partners.

In addition, we have set up a modern, well-equipped training room 120 sqm in size at Geretsried, designed for practical training elements, and added the B-NITROX Series systems to the equip-

ment. The training room for theoretical tuition is next door.

BAUER ACADEMY also provides in-house training all over the world on request. ■



SCHULUNGSPROGRAMM 2016
 BAUER ACADEMY | Technisches Kundentraining



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KUNDENNAH
KOMPETENT
PRAXISNAH

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BAUER Calendar

EXHIBITIONS 2ND QUARTER 2016

Exhibition	Topic	Location	Dates
BAUER KOMPRESSOREN GmbH			
Eurosatory 2016	Industry	Paris	13.-17.06.2016
BAUER COMPRESSORS Asia Pte. Ltd. (BCA)			
Deep & Extreme Indonesia 2016	Breathing Air	Jakarta	31.03.-03.04.2016
ADEX Singapore 2016	Breathing Air	Singapore	15.-17.04.2016
Taiwan Fire & Safety	Breathing Air	Taiwan	19.-21.04.2016
Intermech	Industry /CNG	Bangkok	11.-14.05.2016
BAUER COMPRESSORS Inc. (BCI)			
FDIC International	Breathing Air	Indianapolis, IN	21.-23.04.2016
OTC 2016	Industry	Houston, TX	02.-05.05.2016
ACT EXPO	CNG	Long Beach, CA	03.-05.05.2016
FIRE 2016	Breathing Air	Verona, NY	16.-18.06.2016
NEAFC	Breathing Air	The Foxwoods, CT	24.-25.06.2016
BAUER KOMPRESSOREN SERVICE, S.L. (BKES)			
Navalia International Shipbuilding Exhibition	Breathing Air/Industry /CNG	Vigo	24.-26.05.2016
BAUER BAUER KOMPRESSOREN GCC FZE (BKG)			
Iran International Oil & Gas	Industry	Teheran	05.-08.05.2016
BAUER KOMPRESSOREN India Pvt. Ltd. (BKI)			
Security And Fire Event (SAFE) South India	Breathing Air	Chennai	09.-11.05.2016
Smart Cities India 2016	Breathing Air	New Delhi	11.-13.05.2016
BAUER COMPRESSORS Co. Ltd., Japan (BKK)			
IFCAA 2016 Osaka	Breathing Air	Osaka	10.-11.06.2016
BAUER KOMPRESSOREN UK Ltd. (BUK)			
AIR-TECH 2016	Industry	Birmingham	12.-14.04.2016
The Great Northern Dive Show	Breathing Air	Manchester	23.-24.04.2016
PDM Plastics	Industry	Telford	14.-15.06.2016
BAUER KOMPRESSOREN OOO (BKR)			
Neftegaz	Industry /CNG	Moscow	18.-21.04.2016
Integrated Safety and Security Exhibition	Breathing Air	Moscow	17.-20.05.2016
BAUER KOMPRESSOREN Ges.m.b.H. (POS)			
Edura	Breathing Air	Kielce	09.-11.06.2016