

KAESER report

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TRADITION & INNOVATION



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100 Years KAESER KOMPRESSOREN

100 years ago, my grandfather, Carl Kaeser Sr. – together with eight employees and two apprentices – founded a machine workshop that specialised in gear cutting and car engine overhauling. In 1947, my father, Carl Kaeser Jr., made the decision to start manufacturing the first serial production reciprocating compressors.

Today, Kaeser Kompressoren SE remains a fully family-owned business that offers and markets its industrial compressed air technology products and services in over 100 countries through its own subsidiaries and exclusive sales partners. Kaeser Kompressoren has remained competitive for 100 years and has been able to grow successfully through its combination of uncompromising customer orientation and constant innovation with highly motivated and expertly skilled employees and sales partners.

We are all very grateful and can look back on our 100-year history with a sense of great pride and accomplishment. Moreover, our history is not only a basis for the present and a solid foundation to enable us to look firmly and clearly to the future, but is also the basis for us to meet and overcome the ever-evolving challenges that the future has in store. Breathing possibilities stand before us, which, at first, may present themselves as unsolvable problems. However, we need to tackle and solve these problems, but this cannot be achieved by individual skilled people.



Dipl.-Wirtsch.-Ing.
Thomas Kaeser
Chairman,
Managing Board



Dipl.-Wirtsch.-Ing.
Tina-Maria Vlantoussi-Kaeser
Managing Board

The solutions we seek will be found only through collaboration: with the development of the potential harboured in human communities that comes to fruition only through open and constructive co-operation between dedicated people who are free to act on their own initiative.

Digitalisation, the Internet of Things (IOT), Smart Factory, networking and artificial intelligence are all helpful tools to make companies more efficient, flexible and innovative, and, ultimately, more competitive. This gives rise to completely new business models for products and services that bring significant measurable benefits to our customers.

Every era has its own challenges, potential and opportunities. The guiding principle that helped my parents and grandparents in their decisions in the past can therefore also be an inspiration to us today: set clear and innovative customer- and employee-oriented goals, and have a burning desire to achieve them.

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From a machine workshop to a global player

KAESER KOMPRESSOREN turns

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Carl Kaeser Sr. established his machine workshop in 1919. Today KAESER is a highly successful global supplier of compressors and compressed air systems that remains true to its roots.

1919: the beginning

Carl Kaeser Sr. establishes the company as a machine workshop on the 27th of June, 1919 in Coburg. It was a difficult time, fraught with instability, just a year after the end of the First World War. After starting out as a maker of spare parts for motor vehicles and engines, especially gears, he later branches out to produce specialised equipment for the glass making industry. Through the division of Germany after the Second World War, KAESER is cut off from a large portion of its original market in the states of Thuringia and Saxony and is forced to pursue business in new markets in southern and western Germany. A decision that was to shape the company's future: KAESER's expertise in engine manufacturing, coupled with strong demand for compression equipment in the post-war economy, results in an addition to the product range: compressors. The first reciprocating compressor developed by KAESER is shipped in 1948. Within a few years the company's reciprocating compressor programme covers the full range up to 60 kW.

Expanding the product range

Carl Kaeser Jr., the founder's son, takes the initiative for the company's next strategic departure: the development of rotary screw compressors. At the heart of every KAESER rotary screw compressor lies

the proprietary rotary screw airend with a new energy-saving rotor profile – the SIGMA profile. Manufacturing of these new rotary screw compressors begins in 1973. Over the coming years, KAESER KOMPRESSOREN takes its place alongside the world's leading manufacturers of rotary screw compressors.

Following the acquisition of the French manufacturer Compresseurs Bernard in 1982, KAESER develops the KAESER Mobilair series of portable rotary screw compressors for the construction industry, initially manufactured in Lyon, France.

In 1991, shortly after German reunification, KAESER acquires Geraer Kompressorenwerke, one of Germany's oldest compressor makers, and develops the OMEGA rotary lobe blower. Manufacturing starts in Gera in 1993.

With SECOTEC, KAESER develops a completely new line of energy-saving refrigeration dryers in 1994. In the same year, Germany's most advanced manufacturing facility for refrigeration dryers goes into operation in Gera.

KAESER launches the revolutionary SIGMA CONTROL compressor controller on the market in 1998. This proprietary development, based on industrial PC technology, reduces life cycle costs and further improves equipment availability. It has since become an integral part of KAESER

rotary screw compressors.

Building on the successful launch of the SIGMA CONTROL, KAESER "computerises" the entire compressed air station in 2001: With the innovative SIGMA AIR MANAGER, the combined benefits of a state-of-the-art industrial computer and high-speed network technology are introduced into the world of compressed air technology for the first time. This paves the way for further gains in dependability, efficiency and cost transparency in the compressed air supply.

The road to expansion

Various construction projects in Germany and abroad create additional space over the years to meet the company's increasing capacity needs: In the spring of 2002, the new manufacturing centre for portable compressors (the MOBILAIR plant) opens in Coburg. In 2004, the year begins with the official opening of the new product



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development centre in Coburg, providing an ideal working environment for development engineers. At the opening ceremony, Thomas Kaeser, Chairman of the Managing Board, says, "Our goal is to develop and deliver innovative products that are tailored to customer needs in greater numbers and more quickly than ever before." In the same year, KAESER KOMPRESSOREN completes construction of a state-of-the-art distribution centre. Key elements of this innovative facility, which revolutionises logistic processes throughout the company, include a new, fully automated high-rack warehouse and a high-performance picking system for small parts and spares. Apart from laying the groundwork for continued growth in production, KAESER expects the new facilities to improve on-time delivery rates and therefore to boost customer satisfaction.

In 2008 KAESER opens a new plant for cladding components in Sonnefeld. It begins manufacturing panel components, doors and enclosures for rotary screw compressors. In October 2013, the company starts construction of a new research and development centre at the Gera manufacturing site. Excellence in innovation is a top priority. A steady stream of innovations keeps KAESER KOMPRESSOREN at the forefront of compressed air drying technology – amongst others. The construction projects continue: in May 2014, KAESER initiates the transition to a smart factory approach. With the groundbreaking ceremony for two new production halls for rotary screw compressors, the future begins to take shape at the Coburg site.

Another construction product is launched in Coburg in September 2015. This time it is for the research and innovation centre – soon to be the incubator of new ideas and inventions. The facility is completed in late 2017 and the first employees start moving in.

Awards in Germany and at the international level

Thomas Kaeser is awarded the State Medal for outstanding contributions to the Bavarian economy in 2012. The ongoing development of innovative products, a defining feature of the company since its earliest beginnings, earns recognition and respect among the general public and industry experts alike: In 2013 the new SECOTEC TF 340 energy saving dryer is selected as a finalist for the prestigious Hermes Innovation

Award, conferred by the Hanover Trade Fair to honour outstanding and trailblazing technological developments. With its innovative thermal storage system, the new dryer achieves energy savings of up to 70% compared to conventional dryers. In 2014 it is selected for a Gold Award for best product in the USA.

KAESER as an employer

As one of the largest providers of apprenticeship opportunities in its region, KAESER KOMPRESSOREN excels in the training of skilled personnel. KAESER apprentices and trainees regularly score top results in the Chamber of Industry and Trade examinations, both regionally and nationwide. To promote real integration within the company while simultaneously taking action to address the skills shortage, KAESER creates

20 additional training positions for young people with refugee backgrounds in 2016. The former youth hostel in the Ketschendorf district of Coburg is converted into a residence for KAESER apprentices from all over the world.

In recognition of its endeavours as a provider of in-house training opportunities, KAESER is awarded first prize in the Industry, Trade and Services category by the jury adjudicating the "Training Ace" competition in December 2016. The competition is held under the auspices of the German Federal Ministry of Economics.

Ready for the future

With over 100 subsidiaries and sales partners worldwide, the international KAESER group is present in all major industrialised countries, especially in the economic ar-

reas of Europe, North America and Asia Pacific. November 2013: With its re-incorporation as a "Societas Europaea" (SE) – a European stock company – KAESER KOMPRESSOREN takes a further step in its international strategy. The family company is now at home all over the world, offering uncompromising "Made in Germany" quality.

The managing board comprises the chairman, Thomas Kaeser Dipl. Wirtsch.-Ing. and Tina-Maria Vlantoussi-Kaeser Dipl.-Wirtsch.-Ing.



KAESER KOMPRESSOREN at the 2019 'Hannover Messe' – the world's preeminent trade fair for industrial technology: Hall 26 Stand C51

Integrated Industry – Industrial Intelligence

"Integrated Industry – Industrial Intelligence": that's the theme of this year's 'Hannover Messe', the preeminent global industrial technology trade fair, taking place on the 1st to the 5th of April, 2019, in Hanover, Germany. The theme was chosen to embrace the far-reaching concept of digital networking of people and machines in the age of artificial intelligence.

"The focus is squarely on people. They make the decisions and set the tone," explained Jochen Köckler. With those words, the CEO of 'Deutsche Messe', underscored the role of 'Hannover Messe' as the home of industrial technology trailblazers, synonymous with progress for over seven decades. More often than not, the ideas and trends that revolutionise industry are first presented to the global public in Hanover. This is where visionaries from around the world, representing diverse industrial sectors, get together to capture synergies and to discuss and develop the solutions of the future.

The place where the future of industry is born

Six leading trade fairs and one platform: at the world's biggest industrial fair, visitors experience the full range of technical innovations, starting with A for automation, and covering every key area across the entire value chain.

Under the motto, "Air is just the beginning," ComVac, the leading international trade show for compressed air and vacuum technology, will highlight hot topics in the world of compressed air and vacuum technology, including: energy and resource management, the accelerating trend in contracting and operator models as all-round solutions, and predictive maintenance in the context of Industrie 4.0.

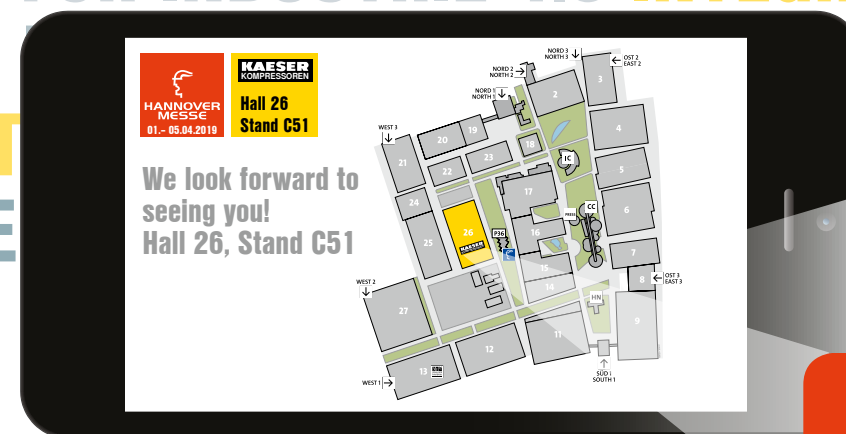
Key technologies for Industrie 4.0

When designing a compressed air supply system as a seamlessly integrated element in an integrated industry concept, a key factor for success or failure is the selection of the appropriate compressors and air treatment components. Get an up-close look at compressed air solutions that are more than just reliable and energy-efficient. Thanks to advanced IT integration, they can also be integrated seamlessly into Industrie 4.0 production environments. KAESER looks forward to seeing you at Stand C51 in Hall 26, where the latest

KAESER products and ideas will be showcased in 1300 m² of exhibition space. For plenty of useful information and easy onsite navigation, access the 'Hannover Messe' app on your phone (available on the 'Hannover Messe' website).

To achieve truly seamless integration of the compressed air supply into integrated industry environments, KAESER KOMPRESSOREN links machines using the SIGMA NETWORK and the SIGMA AIR MANAGER 4.0 master controller. This advanced controller provides optimal management of the entire compressed air station. It functions as the station's brain and represents the key technology for using services in the Industrie 4.0 world of tomorrow. This compressed air management system uses adaptive 3-D^{advanced} Control to make compressed air production and treatment smarter, more efficient and more secure than ever before. 3-D^{advanced} Control continually analyses all operating data, simulates alternative actions and calculates the perfect combination of compressors. The

SIGMA AIR MANAGER 4.0 KAESER SIGMA NETWORK
KEY TECHNOLOGY FOR INDUSTRIE 4.0 INTEGRATED INDUSTRY
KAESER SIGMA
IOT CLIENT
PREDICTIVE



result: unprecedented energy efficiency. Thanks to easy and intuitive operation, clear visualisation and analysis functionality, users have a full overview at all times – from any PC. Combined with SIGMA AIR MANAGER 4.0, the KAESER SIGMA NETWORK offers a perfectly coordinated and secure infrastructure for intelligent Industrie 4.0 services. Based on Ethernet technology, the powerful SIGMA NETWORK is a closed and secure network specifically developed to support optimal monitoring and coordinated control of compressed air station components.

Rounding off the KAESER Industrie 4.0 package is SIGMA SMART AIR. This innovative KAESER KOMPRESSOREN service delivers predictive maintenance combined with maximum energy efficiency and compressed air availability, far exceeding the capabilities of previous systems. This ensures real-time availability of operating, service and energy data – an essential prerequisite for making the transition from compressed air system maintenance

based on scheduled service intervals to a predictive maintenance concept; this greatly reduces the life cycle costs for the compressed air supply.

Maximum energy efficiency

To learn how to achieve maximum cost effectiveness and see the modern, high-efficiency rotary screw compressors that can achieve this, visit the KAESER stand in Hanover. You'll get a close look at the innovative water-cooled ESD rotary screw compressor (flow rates: 6–47 m³/min), the DSD/DSDX (4–34 m³/min) and the FSD (10–61 m³/min). These systems offer the most cost-effective performance of any fluid-injected rotary screw compressors on the market. Also on display: the CSDX SFC (flow rate: 1.1–17.5 m³/min), featuring a future-ready, energy-efficient synchronous reluctance motor and speed control – in series production from the end of 2018.

From the FSG series, our largest line of oil-free rotary screw compressors, fair visitors will see the new FSG with i.HOC. The pat-

ented KAESER i.HOC rotation dryer utilises 100% of the compression heat. With full-flow regeneration, it reliably delivers flow rates of up to 50 m³/min and low pressure dew points at ambient temperatures of up to 45 °C – with no need for electric heating or additional cooling of the regeneration air. We have further expanded our energy-saving SECOTEC series, featuring the innovative latent heat storage system, with the addition of several new models, extending the output range up to 90 m³/min for the first time. At the 'Hannover Messe' we will be presenting the SECOTEC TG, which will be available on the market as of July/August 2019. To learn more about our services and product portfolio, come and talk to the KAESER KOMPRESSOREN compressed air experts!

We look forward to your visit and to telling you all about the latest technologies and coming trends.



FACC, Austria's largest aviation company, has risen to become a global player with high-tech within a few decades. The high-strength lightweight components are in demand and in great demand – as a result, today hardly any aircraft is delivered worldwide that does not contain a component from the Upper Austrians. Only compressed air that is free of oil and moisture is suitable for the application of innovative technologies.



Images: FACC

FACC – an Austrian global player

Flying high with clean air

Drilling with sand

FACC has gained an excellent reputation in the market for its technical skills. A special area of expertise is the “acoustic surface”. A robot drills hundreds of thousands of approx. 1 mm-diameter holes in the inner carbon surface of an engine nacelle. The lower end of the hole opens into a honeycomb-like core of expanded aluminium. These holes have no effect on stability. However, the aluminium core has outstanding sound-absorbing qualities. That means that the sound is damped right where it is created. A remarkable fact: instead of conventional drilling methods, the holes are made by high-pressure sandblasting.

Environmental protection and energy efficiency

The sandblasting process is the largest consumer of compressed air in FACC Plant 4 in Reichersberg. The remainder is distributed across a large number of hand tools, tensioning devices on grinding machines and other small consumers. It is absolutely essential to have a reliable and secure supply of compressed air. The KAESER experts have configured the compressed air station accordingly, ensuring that fluctuating air flow does not impact the economic efficiency of plant operations. Six fixed-speed rotary screw compressors of type DSD 201, 240 and 241 handle the base-load requirements, whilst peak demand is

Upper Austria, long famed as the industrial heartland of the Alpine region, is now home to a rising star in a high-growth, high-tech sector. FACC, located in the Innviertel district of Upper Austria, just outside the town of Ried im Innkreis, has risen to prominence in the aviation industry. FACC began life as a spin-off from the research department of Fischer, a ski manufacturer. The aviation industry discovered the expertise in material science and lightweight construction of the Austrian winter sports specialists back in the 1980s. The company's near-meteoric rise began with a development project for a supporting rod on the Airbus A300 airliner. The company's list of customers now reads like a who's who of the global aerospace industry: aircraft manufacturers such as Airbus, Boeing,

Bombardier, Embraer, COMAC and Sukhoi, engine makers and their suppliers all rely on products from the main plant in the Alps. Today the company employs 3,400 people

worldwide, including 3,200 in Austria, who generate annual sales of approximately €750 million.

Assembling a winglet in FACC Plant 3 (Aerostructures Division).

Key future technology: lightweight construction

The core competency of FACC is the development and manufacturing of carbon composite parts for aircraft in three main areas: Aerostructures, which involves the production of wing components such as elevators, rudders and winglets. The Interiors division supplies aircraft manufacturers with passenger cabins, from ceiling panels and overhead luggage bins to side panels. The third area – the Engines & Nacelles division – specialises in engine components and enclosures.

For all developers at FACC, the top design priority is to keep component weight to an absolute minimum. The materials of choice for achieving that objective are carbon composites. FACC produces tailor-made

lightweight components made up of hundreds of layers, and in some cases more than a thousand. Experts precisely calculate the stresses in advance – experienced by an engine nacelle, for example – to determine the exact number of layers needed at every location. This results in components that combine the toughness needed for the heavy demands of aviation with the minimum achievable weight. Another advantage of carbon: there is practically no thermal expansion. “An aircraft taking off in a hot desert region will be exposed to an ambient air temperature of minus 50°C just 20 minutes later,” says Christopher Jell, the Senior Manager of IE & FM Engines & Nacelles. “Our carbon components handle these rapid and extreme temperature fluctuations without the slightest difficulty”.



The engine nacelles are hardened in the autoclave to attain their final material characteristics.



Up to 1000 or more layers of carbon composite material are combined to produce engine nacelles.



FACC manufactures engine components using lightweight construction techniques here in Reichersberg

Images: FACC



Top: FACC

Maximum flexibility: the lightweight construction of the engine nacelles permits ideal streamlining of the engine in line with aerodynamic conditions.

covered by a DSD 281 SFC variable-speed unit. The compressors can be switched on and off flexibly to match current demand.

This task is performed by the SIGMA AIR MANAGER 4.0 master controller with adaptive 3D pressure control. Among other functions, it ensures that the pressure never drops below the lowest permitted operating pressure as detected at the pressure sensor measurement location.

Because the compressed air must be free of oil and water, four refrigeration dryers with energy saving control (TI 521 FE and TE 141 models), two compressed air treatment lines with activated carbon adsorber (ACT 601) and two air-main charging

systems are integrated into the system to ensure delivery of water and oil-free compressed air in accordance with DIN 8573-1

The decisive factor for FACC was KAESER's ability to meet a mandatory specification, namely the ability to deliver compressed air free of oil and water.

and oil purity Class 1. The result is a residual oil content of less than 0.01 mg/m³.



The compressed air treatment also applies the latest technical advances.



The SIGMA AIR MANAGER 4.0 master controller with adaptive 3D pressure control allows the individual compressors to be switched on and off as conditions require.

New lightweight generation in the MOBILAIR portable compressor series

Exhaust gas after-treatment now available in the compact class

As per the EU Stage V emissions standards, tighter air pollution limits will take effect for construction equipment as of 2019. As a result, a particle limit will apply for the first time to power categories from 19 kW and upward. This means that exhaust treatment systems will now be required for units in the compact portable compressor class.

For road transport and the handling of compressors on building sites, operating weight is an important factor. Trailers weighing less than 750 kg do not require an axle brake and can be towed by drivers without a special trailer licence. On the other hand, under the new exhaust regulations, engines will require diesel particulate filters and larger coolers. Both add weight to the compressor and require a larger body. Those factors run counter to the expectations of the market, where users still want light and compact portable compressors in the 5 m³ class. To meet that demand, lightweight construction is essential.

In 2002, KAESER KOMPRESSOREN introduced a double-walled, rotation-moulded polyethylene (PE) sound enclosure for MOBILAIR portable compressors. It was an immediate hit worldwide. For the M5x development project, it was necessary to find an even lighter material that would still be sufficiently rugged to withstand hard knocks on building sites. In the end, the developers opted for an aluminium chassis. The M5x design points the way forward to the next generation of the MOBILAIR portable compressor series.

Synergy of old and new

Despite the extra weight of the optional compressed air aftercooler, the new M59 model still has the advantages of the M50PE predecessor model, namely an operating weight of less than 750 kg combined with a large fuel tank sufficient for a full day's work onsite. It can therefore be towed in road traffic without an overrun brake. The reduced weight saves maintenance costs, too. Moreover, under EU regulations, the driver does not require a special licence to tow the trailer, which means that anyone can transport the unit from A to B. The weight of the compressor is also

a factor when selecting the towing vehicle. A lighter trailer means fewer restrictions. And of course when it's time to decouple the compressor onsite or manoeuvre it with muscle power, every pound counts. Naturally the light metal chassis is not the only new development. A number of important improvements can be found inside the enclosure, too: the pXv control, familiar from larger MOBILAIR models, offers even more flexibility in the potential applications for the new 5m³ compressor. The maximum pressure (p) can be infinitely adjusted with the controls and influences the maximum flow rate (v). This flexible control system allows applications ranging from breaking concrete at a maximum pressure of 7 bar to sandblasting work at 10 bar. Selecting the pressure setting using the time-tested SIGMA CONTROL SMART controller is easy and convenient – as is system start-up.

Needless to say, an overrun brake chassis option is available for the M59 upon request. This feature is used, for example, if the user opts for a generator or compressed air treatment equipment with a filter combination. With this new, future-forward generation of portable compressors, noise protection is provided for the first time by gull-wing doors made of rotation-moulded polyethylene (optionally available: aluminium). The M55 model for the US market with a Tier 4 Final engine is equipped as standard with the polyethylene gull-wing doors. For both versions: on the M55 and M59, the two large gull-wing doors provide excellent access to all service points.



EU version of the M59 (aluminium): The brand-new HATZ Diesel engine from the M59 is a perfect fit for this Made in Germany concept.

US version of the M55 PE.



Images, above: Fuchs Group

The Fuchs Group – cultivating a world of good taste

Spice is the variety of life!

It is certainly not a new realisation that food is about much more than nourishment. The experience of flavours can represent pure enjoyment while enhancing our sense of culture and lifestyle. To attain the consummate taste experience, we need the right ingredients. The goal of Fuchs Group in Lower Saxony, with its precious spices and spice mixtures, is to help turn a meal into a genuine culinary event.



Image: Fotolia

Fuchs Group is Germany's largest spice manufacturer and the world's largest privately owned company in its industry. Established by Dieter Fuchs in 1952, it is one of the biggest employers in its home region. It has its headquarters in Dissen, in the state of Lower Saxony, at the edge of the Teutoburger Wald forest region. The product portfolio covers an unparalleled selection of spices, spice mixtures, herbs, spreads, pastes, sauces, dips and many other ingredients for a healthy, creative and varied cuisine, comprising more than 8,000 products sold in over 60 countries. Fuchs Group employs approximately 3,000 people in 10 countries on four continents. In Germany the group has other

locations in Abtswind and Hammlar (Bavaria), Melle (Lower Saxony) and Schönbrunn (Schleusegrund, Thuringia).

A tradition of partnership

So, what is the company's secret recipe for achieving maximum quality from the very start of the value chain? Careful selection of the ideal growing regions for its products and close partnerships between Fuchs Group employees and the farmers and contracting partners on the ground. The exchange of ideas and experiences and the transfer of knowledge benefits the suppliers in the growing regions – and ultimately it enables the Fuchs Group itself to ensure consistent quality.

From the life of a peppercorn

The Fuchs Group's most important pepper growing regions are in Brazil, specifically in the northern half of this gigantic South American country. Because the north of Brazil is hot, like the south, but much wetter, it is ideal for growing pepper. The pepper plant is a perennial woody climbing vine that grows on trees, reaching heights of up to 10 metres. When cultivated, the plant is generally limited to a height of 3–4 metres. The small, unremarkable flowers grow on spikes around 10 cm long, with 50 to 150 flowers per spike. After pollination, the fruits (drupes) typically ripen within 8–9 months. The various types of pepper (black, green, white and red) differ by the degree of ripe-

ness when harvested, among other factors. Quality assurance accompanies the entire process, starting in the field with the growing plant. After the harvest, the raw product is dried using the almost unlimited resource of Brazilian sunshine, available 300 days a year. This is followed by the next meticulous quality inspection. Afterwards every sack of raw product is assigned a QR code that permits tracking of "our" peppercorn every step of the way, from the field to the in-store packaging. Now the peppercorn – still whole at this point – can embark on its journey to Germany.

A special aromatic experience

Upon arrival in Dissen, the sacks of Brazilian peppercorns, along with other sacks and transport packages containing a wealth of different herbs and spice plants from all over the world, are placed in temporary storage in the 10,000 square metre warehouse. Catching the powerful fragrances pervading this space, visitors inevitably feel as if they have been transported to some far-off bazaar. Amid this somewhat overwhelming but highly aromatic sensory experience, one occasionally detects a familiar scent amongst the stored sacks and containers: oregano, cinnamon, paprika, nutmeg and – of course – pepper. From the warehouse, the raw materials are trans-

ported to another thorough quality check prior to the further processing steps. In the 34 metre, eight-storey grinding mill tower, the various herbs and spices are cleaned, dried, ground, sieved, mixed and placed in the final packaging in which the finished product is sold.

Compressed air in the service of gourmets

Throughout the entire production process of the Fuchs Group, there is a unifying theme: compressed air. For every step in its operations, from the transport of the spices and herbs through to the cleaning, drying and grinding processes, and to control the machines and systems, the Fuchs Group

needs compressed air. Consequently, the company cannot afford any bottlenecks or disruptions in the compressed air supply. The reliability and availability of this universal energy source is of paramount importance. When it was time to replace the obsolete compressors from another manufacturer due to increasingly frequent breakdowns and problems, the obvious choice was the Coburg-based system provider KAESER. For food processing operations, compressed air must meet the highest quality standards of Class 1.4.1 under DIN ISO 8573-1. The Fuchs Group compressor room now houses all of the equipment needed for energy-efficient compressed air production in accordance with those stringent requirements: Two new-generation ASD 40 rotary screw compressors with an integrated PTG 40-25 heat recovery system and two TE 102 energy-saving refrigeration dryers. The decisive



The compressed air supply meets the stringent requirements of Quality Class 1.4.1 in accordance with DIN ISO 8573-1.

Group very happy – not to mention the many friends of good cuisine, who can now rest assured that the flavour specialists in

What's more, because the new compressed air station is – among other aspects – highly economical in terms of energy consumption, it is a perfect fit for the Fuchs Group's sustainability strategy.

factor ensuring full compliance with Quality Class 1.4.1: the high-performance KAESER filters connected downstream from the compressors. In the context of the company's sustainability efforts, the new system also has a significant ecological impact. This makes the employees of the Fuchs

Lower Saxony will continue to supply them with high-quality herbs and spices long into the future.



Compressed air is needed in every step of product processing. Shown here: material conveying.



The air in the 10,000 m² warehouse is heavy with the scents of the many herbs and spices stored there.



The air-main charging system prevents overloading of the system and contamination of the compressed air network when the system is restarted.

Images left and centre: Fuchs Group

Compressed air for the Institute of Thermal Turbomachinery at the Karlsruhe Institute of Technology



The Institute of Thermal Turbomachinery at the Karlsruhe Institute of Technology (KIT) recently purchased an HSD 662 SFC rotary screw compressor system. It will help to deliver compressed air to the extensive experiment equipment and facilities in the research laboratories. For the experts from KAESER, the task of installing the new system posed substantial – but not insurmountable – challenges.



In the service of research

The Institute of Thermal Turbomachinery is part of the mechanical engineering department at the KIT. The institute, including its research facilities, is housed in a former experimental power station. The building, which today is used exclusively as a lab-

oratory, was planned and designed in the 1950s by the architect, furniture designer and former professor at the KIT, Egon Eiermann. Among the designs that earned Eiermann fame both in Germany and abroad were the Kaiser Wilhelm Memori-

al Church in Berlin, the German Embassy in Washington and the office building for the members of the German parliament in Bonn. Defining features of the building, with its east-west orientation, are the clear structure, expansive glass surfaces and the



The body of the compressor unit had to be guided carefully through the light shaft.

exposed steel skeleton – an unequivocally modernist design. The building in which the laboratories are currently accommodated is now a listed architectural heritage site.

Research projects at the KIT

The Institute of Thermal Turbomachinery carries out many research projects in close collaboration with partners from around the world, including universities, research institutes and companies in the turbomachinery and automotive industries. The research work conducted at the institute under Professor Hans-Jörg Bauer centres around turbomachinery, and predominantly aircraft engines, and gas and steam turbines for energy production, and turbochargers of the kind used in combustion engines. The researchers conduct experiments for which they develop and implement advanced measurement techniques and also apply the latest numerical methods to simulate flow and heat transfer processes. Key objectives of the institute's research activities are to improve the efficiency of future aircraft engines and gas turbines while significantly reducing pollutant concentra-

tions in the exhaust gases they produce. Numerous complex experimental setups are used to develop and evaluate new combustion concepts and cooling methods. The advanced methods used include state-of-the-art laser technology to characterise the flow patterns typical of turbomachinery and quantitative infrared thermography to detect surface temperatures. These facilities require a reliable compressed air supply: for some applications, the compressed air must be pre-heated to temperatures of up to 850 °C.

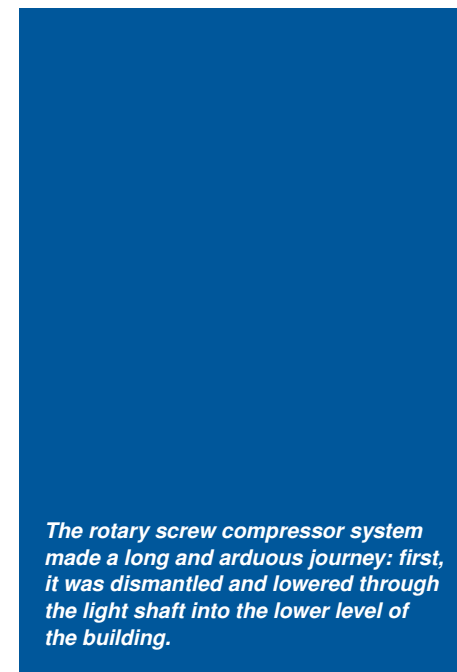
The main requirement: constant pressure and air flow

The previous compressor system had reached the end of its service life and needed to be replaced. The requirements for the new system were as follows: it would need to provide highly consistent pressure and air flow at varying pressure levels and for fluctuating air delivery requirements. So far, so good. But there was a special challenge: the equipment had to be installed in the lower level of a listed historical building without adequate access routes. It was immediate-

ly obvious that a standard product was out of the question. The institute was therefore searching for a reliable partner not only to provide a modern system meeting the desired specifications, but also with the ability to design and install a system around the unique structural constraints of the building. The resulting choice: a HSD 662 SFC rotary screw compressor system from KAESER KOMPRESSOREN. It now comprises the core of the high-pressure, high-temperature system that supplies compressed air to the many research and experiment facilities of the Institute of Thermal Turbomachinery.

So, how do you put the ship into the bottle?

The main hurdle to overcome before commissioning of the system was the physical installation space: the compressor room is not much bigger than the rotary screw compressor system itself and the only access route open to the KAESER experts was through the hollow spaces below the light shafts on the outer facade. The undertaking was not unlike the proverbial placement of a sailing ship in a bottle. For shipping and in-



The rotary screw compressor system made a long and arduous journey: first, it was dismantled and lowered through the light shaft into the lower level of the building.



stallation, the selected system was initially dismantled into its individual components. They were then loaded onto a lorry and, in a two-day process, lowered by crane into the basement through the light shafts. This was followed by on-site assembly of the components in the compressor room on the lower level of the institute. The compressor system was commissioned just a week later, and has been performing its duties since August 2018 – to the complete satisfaction of the institute's management.

Images: KIT

The HSD 662 SFC from KAESER KOMPRESSOREN was selected as the centre-piece of the high-pressure, high-temperature system.



After being placed in the compressor room, the components were reassembled. Since then, the compressor has been doing its valuable work to the complete satisfaction of the institute's management.

The beauty of water

Can water be aesthetic? Absolutely! At any rate, the German-Swiss family enterprise Neoperl ensures that it flows in a highly aesthetic way: Neoperl products shape the water stream, regulate the flow rate and protect water from contamination. And although they can be found in use with just about every washbasin, bath or kitchen fitting, they spend their useful lives languishing in near-obscurity as they are virtually invisible.

The joint Swiss/German family company Neoperl was founded in Reinach-Basel in 1959. In 1961, the Group's German headquarters, Neoperl GmbH, was established in Müllheim. The owner-managed, medium-sized enterprise is the world's leading supplier for the plumbing industry with sales subsidiaries in every corner of the globe, wherever its customers are based.

The success story began over half a century ago. Over the years, the company has developed a wide range of sanitary products, which currently includes aerators, flow regulators, check valves, diverters, connecting hoses and shower hoses, together with various accessories. One of the milestones in the company's history was the first noise-reducing aerator, which was developed in the 1970s. During the 1980s, the Neoperl Group introduced its long-life technology and, in the 1990s, launched the world's first aerator without a wire mesh. Today, Neoperl supplies products and spare parts to the world's leading fittings manufacturers, technical OEMs and the wholesale and retail trade.

Practical and beautiful

Millions of people use Neoperl products every single day. For example, the jet regulators can be found today on virtually every outlet fitting on washbasins and bathtubs. They shape the water into a splash-free stream and make it pleasantly soft by drawing air into the flow. Moreover, they reduce the fitting's noise, help conserve water and save on energy costs.

Moreover, aesthetics also take centre stage. In 2016, the product design of the Mikado

the customer's country of origin, the company knows the plumbing conditions on the ground like the back of its hand: water hardness, water pressure, lime content, impurities, construction methods and national standards. The products are adapted to the local conditions in the on-site production plants.

To ensure proximity to its customers throughout the world, the international company employs approximately 1800 staff in 17 countries. The extensive logistics infra-

The advantages of a SIGMA AIR UTILITY STATION are clear: there is no investment outlay, fixed costs are converted into variable costs and running costs can be precisely calculated.

aerator won the Red Dot Award for its extraordinary, grid-like spray pattern, formed by the geometric arrangement of individual water jets.

Different regions, different conditions

Drinking water networks have unique features in every country. With subsidiaries in

structure consists of 12 production plants in Europe, Asia and the United States, as well as sales subsidiaries in all key markets.

Success needs space

The world market leader in the sanitary fittings sector has had an outstanding track record for over 50 years. This means that space is sometimes tight in the buildings on



The Müllheim production site uses compressed air as an energy source for every aspect of its manufacturing operations.

the company's 6.25-hectare site. Therefore, the production area has been extended to include a new manufacturing hall. Since the Müllheim production site uses compressed air as an energy source for every aspect of its manufacturing operations, a dependable supply of quality compressed air with precisely defined parameters is of the utmost importance. In addition, some of the compressors in the existing compressed air stations were obsolete; these also needed replacing as part of the modernisation program. As a first step, an air demand analy-

sis (ADA) was carried out to calculate the exact compressed air requirements. Following numerous discussions, site inspections and telephone conferences, it soon became clear that the solution that best met Neoperl's needs and requirements was a SIGMA AIR UTILITY STATION operator model. The advantages of this station are crystal clear: the customer has no capital outlay, the running costs can be calculated in the form of a fixed basic price and maintenance is covered by KAESER's service package – at zero additional cost.

Compressed air at a fixed price

Ideally customised to meet all of these criteria, the modern compressor station comprises several different rotary screw compressors: one CSD 105, three CSDX 165 and one CSDX 165 SFC. Three downstream TF 340 refrigeration dryers dry the compressed air to a Class 4 pressure dew point in accordance with ISO 8573-1. The SIGMA AIR MANAGER 4.0 master controller calculates the perfect compressor combination to meet current requirements. The entire unit is housed in a container located outside the production halls. As a result, the ventilation ducts are also outside, meaning fewer pipelines were needed to set it up, while outdoor installation is better from a fire safety perspective.

Commissioned just a few months ago, the operator is already highly impressed with the new station. After just four weeks of operation, the first before-after calculation produced impressively gratifying results: energy consumption is down by approximately 15% compared to the previous compressor station.

The KAESER SIGMA AIR UTILITY station:

Left: Interior view – configuration of the compressors and dryers.

Right: Exterior view of the station.



Premium quality craftsmanship in series production: AutoGyro GmbH, Hildesheim

The sky's the limit

Mankind's eternal dream of flying like a bird and looking down on the world...

The inventor of the gyroplane, Juan de la Cierva, came very close to realising this dream when he took to the skies with his 'autogyro' for the first time, almost one hundred years ago. Powering the rotor by means of autorotation, rather than the helicopter's use of active rotation, his invention revolutionised the world of aviation.

From a garage workshop to the world market leader

Even as a child, Otmar Birkner, the founder of AutoGyro GmbH in Hildesheim, was passionate about developing and building model aeroplanes. In his parent's garage, he laminated his own first propeller blades, made in moulds that he had deve-

loped himself. He turned his hobby into a career by establishing his own business in Gehrden in 1995, High Tech Composites (HTC), which specialised in manufacturing composite (plastic) parts, such as propeller blades. However, that was just the beginning. In 2000, the company moved to Hildesheim, where Otmar Birkner founded

AutoGyro GmbH. He teamed up with two friends to develop his first fully functional aircraft, which received a type certificate in 2004. Three years later, the first "AutoGyro" went into series production. Since then, other models gradually followed every few years: the "Calidus" in 2009 and the "Cavalon" in 2011, subsequently garnering



Approximately 90% of the components are manufactured on-site.



Emphasis is placed on maximum precision in the individual production stages.



The tail units are also produced in the factory at Hildesheim Airfield.

the Red Dot Design Award in 2012. Last year, the exceptional design of the sleek planes received yet another accolade: the “MTOsport” won the coveted “Best of the Best” 2018 Red Dot Design Award, which officially attested to the ultra-light aircraft’s “innovative symbiosis of aesthetics and function”.

On course for success

Since its foundation, the gyroplane specialist has reported steady growth and today employs a 100-strong workforce. From the first brushstroke of the draft through to the test flight, the majority of the components for the ultra-light AutoGyro (aside from the engine and a few instruments) are manufactured completely in the production facilities at Hildesheim Airfield by the highly qualified team of technicians and engineers. With sales partners in over 42 countries around the world, numerous flight schools and service locations, and the gyro factory at its Hildesheim headquarters, AutoGyro serves a worldwide network with the aim of combining safety and the gyro’s unlimited versatility for the pure joy of flying. Globally, some 3000 autogyros are deployed on a variety of missions, ranging from the Qatar Royal Guard to Australia’s “Shark Patrols” and partners for adventure trips, e.g. in Namibia.

Fly like Icarus, but safely

Attracting a good deal of attention, the secret of the rotorcraft’s growing popularity lies in its innovative drive technology. Although the gyro resembles a helicopter, the rotor uses the air stream – rather than an engine – to start the rotation process passively. Known as autorotation, this generates the buoyancy of the gyroplane. The aircraft is driven by a propeller engine.



Compressed air is used to power almost every production stage.



The gyroplane before the rotor is fitted.

Thanks to its design, the gyrocopter flies with very special and unique characteristics, making it one of the safest aircraft of all. Unlike fixed-wing aircraft, there is no danger of stalling or tailspin. Even in the event of engine failure, the Autogyro retains full control capability and merely loses altitude slowly; it is therefore still able to perform a controlled landing. Almost like no other rotorcraft, the Autogyro can even be flown in strong winds and can be used practically all year round. As extreme low speed is possible, the gyroplane is ideal for excursions and day trips. Moreover, the sky’s the limit when it comes to the design. It can be customised in any way, from a company logo to a family coat of arms or a distinctive colour coating. The company even received an unusual commission to embellish an AutoGyro with gold leaf and Swarovski stones, recalls Judith Reichardt, who is responsible for marketing and communication. Best of all: the innovative rotorcraft runs at one tenth of the cost of operating a helicopter. Depending on the road traffic regulations, in some countries you can even roll up to a service station and fill up with Super Plus petrol, Judith Reichardt adds.

“We use compressed air in all areas of production”

Ninety percent of the components are manufactured and assembled with pinpoint precision in the on-site production facilities, both by hand and with state-of-the-art CNC machines. Most of the production stages require compressed air, from spray painting to grinding or pressing processes. The original compressor station comprised an SK 24 and a compressor from another manufacturer, “which ultimately kept causing problems, unlike the KAESER compressor”, reports René Stecher, the factory foreman responsible for the compressed air station. A new unit was needed. Given the excellent track record of the first KAESER compressor, the obvious solution was to purchase an additional SM 12.

Four years ago, the station needed to be expanded once again since compressed air was also needed on-site for the assembly line in the plastics processing department located across the road. A further two SM 12 AIRCENTERS were installed for this purpose. A wise decision as the station now runs “smoothly and to our complete satisfaction”, according to René Stecher.



Final cockpit assembly: installation and connection of the aircraft’s avionics equipment.



The KAESER station provides the necessary supply of compressed air.

From spray painting to grinding, the pressing processes and the CNC machines, the majority of the production stages require compressed air.

Long-term customer satisfaction: Koudsy Body Works (KBW), Australia

Prestige vehicle repair and customisation

For over 35 years, Koudsy Body Works (KBW) has been one of the leading specialists for all kinds of vehicle accident and other repairs, for both cars and motorcycles. One glance at the photo gallery on their homepage is enough to set the pulse racing of any customer with a weakness for luxury models or vintage cars – the family business also specialises in the restoration of classic vehicles and car customisation. Extensive interior and exterior modifications are carried out with meticulous attention to detail: from black styling packs to spoiler/body kits, exhaust systems or wheel and tyre packages, automotive fans of all vehicle makes and models are spoilt for choice.

Compressed air an integral part
Koudsy Body Works provides the very highest level of service. It is therefore of key importance to management that their team is always up-to-date with constant training and that state-of-the-art machinery is made available.

After all, the company's philosophy is that "Every vehicle will leave looking better than before". From powering air tools to the spray paint booth, compressed air is an integral part of the operation. Therefore, it is no surprise that air production is also expected to meet the very highest standards. Just over a decade ago, an ageing compressed air system prompted Charles Koudsy, the manager at KBW, to inspect the entire air centre and review the compressed air requirements. When it came to purchasing a new compressor that was both powerful and reliable, the obvious choice was an AIRTOWER 11 from KAESER KOMPRESSOREN. The compact compressor solution incorporates a rotary screw compressor and refrigeration dryer within a single housing, thereby keeping space requirement to an absolute minimum – a key criterion in the vehicle repair industry.

An oldie but a goodie
Managing Director Charles Koudsy is delighted to report that the station has operated reliably for over ten years. "If our com-

In Australia's New South Wales, in Artarmon to be precise, where Koudsy Body Works (KBW) is based, the family-owned business has gained an outstanding reputation, not just for its vehicle repair and restoration services, but also for its exclusive car styling packages.



pressor doesn't work, our business doesn't work. Especially for the spray painting side of the business, without quality and reliable compressed air, we cannot function. The air needs to always be clean with no moisture

in the line. This would not only jeopardise the quality of the finish, but would also be costly to re-do. We pride ourselves on the quality of work we do and it is essential that we use quality equipment. We have had the

KAESER compressed air system for quite some time now and it continues to operate reliably and efficiently for us."

Without compressed air, the repair shop grinds to a halt.



Compressed air is indispensable in powering the tools used in the car repair shop.



Powering the air impact wrench...



...and the spray paint booth.

The world's largest trade fair

bauma

Stands FM.708/15 and FM.708/17.

This year, the 32nd iteration of the world's leading trade fair for construction machinery, building material machines, construction vehicles, equipment and mining machines will take place at the Neue Messe München exhibition grounds in Bavaria, Germany, from the 8th to the 14th of April. Some 3,400 exhibitors from almost 60 countries will present the entire range of construction machinery, vehicles and hand tools available on the market. As the leading industry hub, bauma sets the trends for the future. However, the trade fair is not just geared towards technical specialists but is also open to the public.

Huge cranes, colossal excavators and the latest technology trends – anyone who is in any way active in the construction industry will gather at bauma 2019, where the leading trade fair for construction and building materials machinery will showcase the newest trends and developments in the sector. Since its inception more than 50 years ago, bauma has garnered a reputation as the driver of innovation and success in the global construction machinery industry. This view was shared by the over 600,000 visitors from more than 200 countries who took

advantage of the platform at the last show in 2016 to do business and learn about specific key topics. The fair features live demonstrations of the machinery and its different applications. Experts advise the visitors on the latest developments, while the panel discussions and conferences keep the trade audience up to date on a wide range of subjects.

A trade fair of superlatives

It is the record exhibition space that makes bauma in Munich the world's largest fair: it occupies every hall at Neue Messe München, as well as the outdoor area, which was extended especially for the show. This equates to a huge 605,000 m², divided into 180,000 m² hall space and 425,000 m² outdoor space. The target markets are industry, trade, service providers in the construction and construction materials industry, plus key procurement players.

Industrie 4.0 also for portable compressors

Dubbed the 'Fourth industrial revolution', the phenomenon of human-machine interaction and the on-demand availability of all data will be more widely used in the civil engineering and construction sectors in the future. It is reassuring to know that KAESER's Mobilair portable compressors can be equipped with the necessary technology. It comes as no surprise, then, that 'The smart construction site' is a major focus at the KAESER exhibition stand.

Visitors can take an up-close look under the enclosure of the exhibits, or keep a watchful eye on remote machines in real-time using the Mobilair Fleet Management online tool to access current operating data, evaluate machine performance, find out when the next service is due or pinpoint their location, for example. Moreover, the platform helps users plan operations, manage the accounts and document the working processes that were performed. What's more, remote diagnostics capability saves valuable time when servicing is required.

Innovations in the portable compressor programme

As per the new EU Stage V European emission standards, as of 2019, construction machinery

will be required to comply with even stricter statutory emission limits. For the first time, a particle number limit is also being introduced for machinery with a power range from 19 kW, necessitating exhaust after-treatment systems in the compact portable compressor class. How KAESER achieved the impossible, closing the gap between the market demand for light, compact, portable compressors and the additional weight of the larger diesel particulate filters and radiators required by the exhaust after-treatment, will be revealed at bauma 2019. We will be presenting the next generation of lightweight MOBILAIR portable compressors, featuring an aluminium body for the first time, and brand new design features.

The new models in the proven MOBILAIR portable compressor series – M55, M59 and M65 – will also have their premiere at bauma 2019; highly environment-friendly, their innovative motors comply with the new EU Stage V and the

US final Tier 4 standards. Moreover, visitors will find a broad overview of the entire KAESER MOBILAIR product range: portable compressors with flow rates from 1 m³ to 46 m³/min and power classes from 7.5 kW to almost 450 kW, from the small, compact M13 compressor right up to the oil-free compressed air giant M500-2. When it comes to alternative drives to the diesel engine, the line-up will also include electric drive and petrol engine models, while KAESER will unveil the large-scale M255E compressor with its powerful 160 kW electric motor, designed especially for the compressed air hire sector.

Visit bauma in Munich and discover a host of exciting innovations and technology trends. The compressed air experts from Coburg look forward to welcoming you at Stands FM.708/15 and FM.708/17. The tower of MOBILAIR MODELS with coloured PE enclosures will guide your way straight to KAESER...

**Networking
@ MOBILAIR**



Compressed air for the textile industry at ITMA 2019 in Barcelona, Hall 6, Stand D101



ITMA 2019 www.itma.com

20-26 JUNE 2019

FIRA DE BARCELONA, GRAN VIA
BARCELONA, SPAIN

Innovating the World of Textiles

The global textile and clothing industry converges every four years at a different venue in Europe for ITMA, the world's largest international textile and garment technology exhibition. In addition to technological innovations that create value in the textile chain, events and conferences provide a leading-edge platform to exchange expertise and ideas.

Since 1951, ITMA, the world's largest international textile and garment technology exhibition, has taken place every four years in different cities in the member countries (Belgium, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland and the UK). While the textile machinery exhibition was last held in the north Italian metropolis of Milan in 2015, the organiser CEMATEX is now hosting the 18th show in the Fira de Barcelona exhibition centre from the 20th to the 26th of June 2019. Insiders have long discovered the cosmopolitan capital of the Spanish region of Catalonia as one of the world's most beautiful and dynamic cities. Therefore, it is fair to say that there are plenty of good reasons to attend this year's rendezvous of the textile machinery industry in Barcelona. The ITMA exhibition programme is certainly one of them.

What can we look forward to?

In keeping with the motto of the next ITMA – Innovating the World of Textiles – the trade fair will showcase cutting-edge technologies and sustainable solutions for the entire value chain of the textile and garment industry, including fibres, yarns and fabrics.

The art of sustainable innovation means that waste prevention, recycling and reduced water and electricity consumption are key qualifications for future-proof textile and garment manufacturers. Owing to the ever-increasing use of air-jet looms, the efficiency, availability and dependability of the compressed air supply play an equally important role in terms of sustainability.

The phenomenon of human-machine interaction and the resulting availability of relevant information in real-time have long since impacted the intelligent and flexible production of textile and garment manufacturers. Here too, companies are gaining ever greater competitive advantages by connecting their systems and machines to Industrie 4.0, a benefit that also enables them to maintain and extend their competitive edge on the global stage moving forward.

Ready for Industrie 4.0 with KAESER

Watch the live demonstration at the 390 m² KAESER exhibition stand and find out how KAESER key technology can help modernise your production facilities for the age of Industrie 4.0: the SIGMA AIR MANAGER 4.0 master controller acts as the control centre for your compressed air

supply, optimises pressure performance, automatically adjusts compressor station air delivery to accommodate fluctuations in pressure demand, substantially optimises energy efficiency – based on control losses, switching losses and pressure efficiency – and prepares your compressed air station for services such as predictive maintenance and advanced energy management.

Based on future-proof Ethernet technology, the SIGMA NETWORK provides the necessary communication infrastructure. This local network inside the compressed air station ensures optimal monitoring and control of the air station's components and establishes the basis for the continuous exchange of data. SIGMA SMART AIR adds the final flourish to the KAESER Industrie 4.0 package. On an unprecedented scale, this innovative service from KAESER KOMPRESSOREN paves the way for both predictive maintenance and maximum energy efficiency, whilst assuring compressed air supply availability. This makes the operating, service and energy data of the compressed air station available in real-time, enabling the changeover from today's scheduled maintenance to tomorrow's predictive maintenance. The results in significantly lower life-cycle costs with regards to compressed air supply.

Save energy with KAESER

Since it is not uncommon for the compressed air required to drive the air-jet looms to account for upwards of 85 percent of total system costs, it is particularly important in the textile industry to pay close attention to optimising compressed air efficiency. The KAESER stand in Barcelona will be showcasing the numerous high efficiency rotary screw compressor options available that are designed especially with maximum cost effectiveness in mind: there will be impressive demonstrations of KAESER's innovative water-cooled ESD series (with flow rates of 6-47 m³/min) rotary screw compressors, the DSD/DSDX series (flow rates of 4-34 m³/min) and the FSD series (flow rates of 10-61 m³/min), all of which deliver the very best in operating efficiency that the fluid-injected rotary screw compressor segment has to offer. In addition, a CSDX SFC (flow rate of 1.1-17.5 m³/min) unit featuring a

ground-breaking and power-saving synchronous reluctance motor, combined with variable speed control, will also be on show; this machine is another newcomer to the KAESER portfolio and entered series production at the end of 2018.

The line-up also includes the new FSG with i.HOC from the FSG series, our largest range of oil-free compression rotary screw compressors. The patented KAESER i.HOC rotation dryer utilises 100% of the available compression heat. This full-flow regeneration enables it to reliably allow flow rates of up to 50 m³/min and achieve stable pressure dew points up to an ambient temperature of 45 °C – without the need for any additional electrical heating or cooling of the regeneration air.

We have added several new models to our tried-and-tested SECOTEC series with the innovative latent heat storage system, which, for the first time, are designed for flow rates of up to 90 m³/min. We will be presenting the SECOTEC TG, which goes on sale from July/August 2019, at ITMA.

Find out how your company can get ready for Industrie 4.0: ask for a personal consultation with the KAESER compressed air experts. Visit KAESER KOMPRESSOREN in Hall 6, Stand D101.



Hall 6
Stand
D101



FSG-2 with integrated i.HOC rotation dryer

Impressively efficient compressed air production and drying

Patented reliability

Reliably stable pressure dew points up to an ambient temperature of +45 °C

Efficient drying

Full-flow regeneration – utilises 100% of the available compression heat

Use exhaust heat twice = save twice

Cleverly combines hot water or process water treatment with the compressed air drying process



Efficient compressed air

IE4 drive motors, exceptionally low internal pressure losses

Minimal interfaces

The SIGMA CONTROL 2 manages the compressor, dryer and heat recovery

KAESER KOMPRESSOREN – More compressed air for less energy