

# KAESER report

A Magazine for the Production Industry

2/18

## KAESER connects Industrie 4.0



In great shape:  
Sauer Polymertechnik

On the shores of the sacred lake:  
La Calera in Colombia

Sustainability through innovation:  
Oswald electric motors – top-class quality

Anniversary of a milestone:  
Mobilair PE enclosure



4-6



8-9



10-12

3	Editorial
4	Sustainability through innovation: Oswald in Miltenberg, Germany: high-quality energy-efficient electric motors
7	HBS rotary screw blowers: peak performance over the entire control range A new benchmark in blower technology
8	On the shores of the sacred lake Upgrade for a wastewater treatment plant: La Calera, Colombia
10	In great shape From toys to cosmetics: Sauer Polymer Technology in Neustadt (Upper Franconia) and Föritz (Thuringia)
13	Traditional craftsmanship with state-of-the-art technology A visit to the PrimaVera grain mill in Mühldorf am Inn
16	An Australian family story Into the future with ADA and KESS: Bright Print Group, Sydney
18	The lure of luxury For maximum travel comfort: the ultimate in luxury motor coaches
21	Compact, but packs a punch! New i.Comp 3 series delivers flow rates up to 160 l/min and pressure up to 11 bar
22	Sweet Sixteen – anniversary of a milestone PE enclosure for MOBILAIR portable compressors

### Digitalisation requires customer-centricity, co-operation and creativity

Society and business are in the midst of the process of digitalisation: everything that can be digitalised will, sooner or later, be digitalised. Digitalisation, however, is not an end in itself, but a prerequisite and means to increase efficiency, flexibility and response speed, and to create additional customer benefits, as well as to establish completely new, innovative business models.

This requires a significant “tech-change”, a modern IT infrastructure that enables all stakeholders (customers, distribution partners, suppliers, and employees) to gain access to and be co-operatively involved with all relevant digital data.

Yet more challenging is the associated “people-change”. In order for the digitalisation revolution to be truly successful, customer-centric and creative employees are needed who are willing and able to embrace all facets of this key culture of co-operation.

However, the core principle remains the same: the customer is still the number one priority. Employees should know and understand what is most important to their customers, what their actual needs are, and how and by whom the products and services are used.

The demanding tasks that go hand in hand with digitalisation cannot be solved by individual skilled people. Rather, dedicated employees who organise themselves into interdisciplinary, non-hierarchical temporary teams are required.



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Thomas Kaeser  
Chairman,  
Managing Board



Dipl.-Wirtsch.-Ing.  
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Managing Board

These teams are led by the people with the greatest solutions expertise. Tasks and objectives are driven by common hurdles and challenges which are important for a mutually successful future. This, in turn, generates motivation and commitment to co-operation.

In order to create something new, or to connect the known in new ways so that something new arises as a result, people with in-depth knowledge and who are committed to and further the change process are essential, as are people who have innovative and bold ideas that are able to pave the way to a successful future.

This digital transformation is more than a matter of delegation – it is also a matter of the highest importance for management. The desire, motivation, drive and support to achieve this paradigm shift should come from the top.

Both the technical and human aspects of digitalisation should be addressed simultaneously.

Even if the ambitious goal of digitalising the entire company has not yet been fully achieved, meaningful pilot projects yield rapid step-by-step results. They not only bring measurable success to customers and the company, but also eliminate all concerns and doubt, since there is nothing more convincing than success.

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# Sustainability through innovation

The quiet town of Miltenberg is located along the Main River where it swings north to Frankfurt, near the wooded hills of the Spessart and Odenwald regions. Its location, flanked by vineyards and surrounded by splendid natural scenery, and the mild local climate make it a popular destination for holidays and weekend excursions.

With its typical half-timbered houses and a history dating back to Roman times – to which two ruined forts bear witness – this Lower Franconian town is the home of Oswald Elektromotoren GmbH. The midsized family-owned company, now in its fourth generation, is currently headed by Johannes Oswald, the founder's great-grandson.

**Electric motors for every industry**

Oswald manufactures and develops air-cooled and water-cooled electric motors, rated from 10 to 3,500 kW and designed to customers' specifications. It now has approximately 200 employees, including some 20 apprentices. Oswald's customers – or, to be precise, the companies that incorporate Oswald motors into their final products – can be found in a wide range of industries, from ships, cranes, textile machinery and material testing rigs to aviation engineering and water and wind power – not to mention the Bolshoi Theatre in Moscow. They all have one thing in common: they rely on electric motors by Oswald Elektromotoren GmbH.

**Passionate about technology**

The passion for technology and the search for ways to improve people's lives and living conditions are deeply ingrained in the Oswalds. The family success story began over a century ago, in 1909 – only four years after electric light came to Miltenberg – when Karl Oswald started a small electric motor manufacturing company. Today Oswald Elektromotoren GmbH is a global market leader for primary drive motors, supplying customers in a diverse range of industries with premium quality energy-saving special-purpose motors. The product

*Oswald manufactures electric motors for a wide range of industries*



*The advanced compressor system is monitored by a SIGMA AIR MANAGER 4.0 master controller*

portfolio includes torque motors, synchronous motors, asynchronous motors, generators, linear motors and magnetic field coils. But rather than engaging in series production, Oswald is a niche manufacturer. Instead of offering mass-produced motors, it develops customised direct drives tailored to individual needs. Users benefit through substantial productivity gains and double-digit energy savings.

**The future is now**

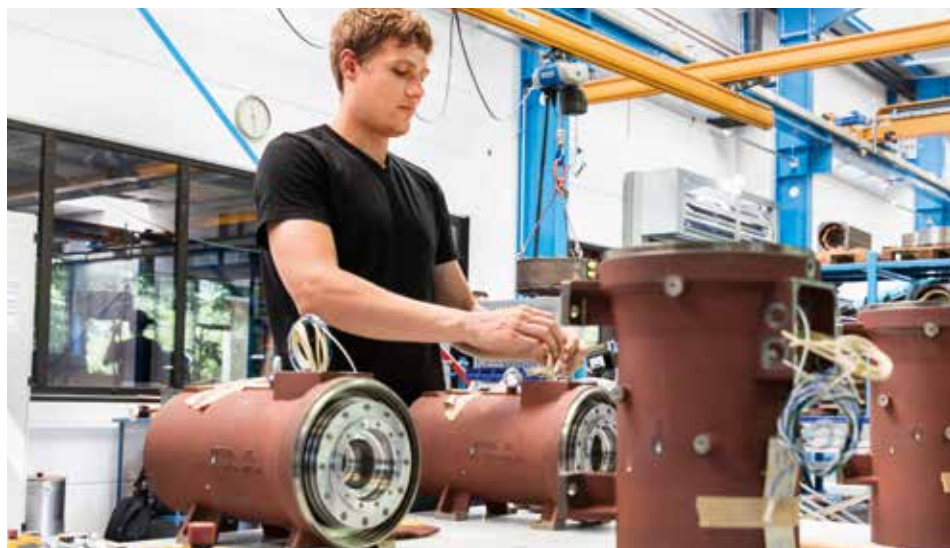
“With our activities in the field of superconducting motors, we are at the leading edge of modern drive technology in terms of power-to-weight ratio, dynamic performance and energy efficiency,” says senior director Bernhard

Oswald. One of his special interests is superconductivity. Now 87, Bernhard Oswald spent many years as a member of Nobel laureate Werner Heisenberg's team at the Institute for Plasma Physics in Garching, where he was the head of the magnetic field technology department. In cooperation with a consortium of European companies and universities and with major manufacturers in the aeronautics industry, the Lower Franconian company is involved in the development of energy-saving propulsion systems for hybrid aircraft. The goal of the research is to reach the point where the jet fuel-powered engine is needed only to drive the electric motor, thus greatly reducing emissions of carbon dioxide, nitrous oxides and noise.

**Protecting the environment with innovative solutions**

The concept of sustainability is extremely important to Johannes Oswald: “Sustainability means placing ever-increasing emphasis on the idea of cycles in our thinking and our manufacturing processes. We have to drastically reduce our emissions and waste and get away from combustion technology. To achieve that, there are two possibilities: Either we learn to do without a great many things, or – my personal pref-





**Top: Electric motor assembly**

**Left: Copper wire brazing process**

**Bottom: Electric motors in an impregnation bath**

erence – we make rapid strides towards a sustainable lifestyle through innovation and technical advancements.”

The company’s goal, in the interests of a cleaner environment and maximum customer benefits, pursued through the development and manufacturing of innovative products, can be summed up very briefly: saving energy while increasing productivity. “The energy turnaround can succeed only through a substantial improvement in energy efficiency,” says Johannes Oswald. “We need to move away from old technologies and replace them with advanced, resource-conserving ones.” The feasibility of this ambition is demonstrated – to name just one example – by torque motors, which reduce energy consumption by up to 50% compared to mechanical or hydraulic drive solutions. For the development of energy-efficient electric motors for industrial applications, Oswald’s managing directors Johannes Oswald and his father Bernhard received the German Environmental Award in 2017.

### Replacing the compressed air station

When the time came for Oswald Elektromotoren to replace its compressed air station in 2015, the management, recalling the good experience with an older KAESER compressor comprising part of the old system, together with components from other manufacturers, again turned to the compressed air specialists in Coburg. The Miltenberg-based company summed up the resulting benefits in its Sustainability Report (p. 27): “By replacing our compressors and the compressed air network, we

By upgrading the compressed air system we have achieved annual energy savings of 80,000 kWh.” In view of those impressive advantages following the first purchase decision, it was only logical, when ordering another compressed air system for a new manufacturing hall at the end of 2017 that Oswald Elektromotoren opted for a KAESER solution once again.

Making life more sustainable through innovation and technical advancements

significantly reduced leaks, pressure levels and running times while boosting efficiency. We also increased heat recovery and reduced our compressed air requirements. With the improved technology, we can activate and deactivate individual sections of the network, which limits our consumption.

### A new benchmark in blower technology

# HBS rotary screw blowers: peak performance over the entire control range

HBS rotary screw blowers define a new benchmark in blower technology for the 132 to 250 kW power range, with flow rates of 40 to 160 m³/min and differential pressures up to 1100 mbar. Introduced at this year’s IFAT trade fair in Munich as a new entry in the segment of powerhouse machines for wastewater treatment plants – an area otherwise dominated by turbo compressors – the HBS was an immediate sensation. The innovative HBS rotary screw blower sets new standards for exceptional control characteristics and energy efficiency.

The HBS blower series combines KAESER’s many decades of expertise in the development of highly efficient rotary screw compressors with its experience in Industrie 4.0 technology. The new rotary screw blowers from KAESER, driven by a loss-free direct drive, are up to 35 percent more efficient than conventional rotary lobe blowers and also deliver significant energy advantages compared to many rotary screw blowers and turbo compressors available on the market.

### Optimal efficiency

These powerhouses feature exceptional control characteristics, quiet operation, an optimised footprint and low maintenance requirements. They also deliver consistently high efficiency across the entire

control range – which makes them an attractive alternative to turbo compressors. A frequency converter is integrated for dynamic adjustment of the flow rate to actual demand. The frequency converter and motor are fine-tuned to deliver optimal overall IES2-class efficiency in compliance with the new EN 50598-2 standard.

### Smart control

The integrated SIGMA CONTROL 2 controller ensures operational reliability and comprehensive communication through integration into process control systems operating within Industrie 4.0 environments. The SIGMA AIR MANAGER 4.0 master controller is recommended for blower stations comprising multiple machines, as it features control and regulation algo-

rithms specially developed for the needs of low-pressure applications. The SIGMA CONTROL 2 brings additional cost savings by simplifying automation of the individual blowers, permitting them to be grouped as a single system for efficient and coordinated operation.

The new HBS rotary screw blowers should be ready to ship from around April 2019.





Upgrade for a wastewater treatment plant: La Calera, Colombia

# On the shores of the sacred lake

After just a few months of system operation, KAESER Colombia Ltda was informed that the client was enjoying energy savings of approximately 80%



The small mountain town of La Calera, Colombia, is situated 9 km to the north-east of Bogotá at an altitude of 2700 meters. It is a dream destination for outdoor enthusiasts, far removed from mass tourism.

Its origins date back to the Spanish colonial era, when, in 1772, Pedro de Tovar y Buendía founded a hacienda near the neighbouring limestone mines. That hacienda now houses the administration offices of the town that gradually took shape around it, including the pretty Nuestra Señora La Virgen del Rosario chapel. Every year it attracts visitors who come to enjoy riding, hiking, climbing and the many other outdoor activities available in the vicinity. Cosy taverns, lively bars, restaurants and guesthouses offer passing travellers and day-trippers enticing options for rest and refreshment. La Calera is an ideal spot to recover from the stresses of everyday life stress amid beautiful natural scenery.

## The legend of El Dorado

The area also has a history, continuing to the present day, as a magnet for adventurers and archaeologists – both amateur and professional: in pre-colonial times, the region was populated by the Chibcha people,

who are believed to have originated the myth of the legendary El Dorado (“The Golden Man”). According to the story, the Muisca, a Chibcha tribe, had an initiation rite for their rulers in which the new king taken to Lake Guatavita, a small lake in the mountains near Bogotá, to worship the sun god. He was covered with gold dust and then rowed with his followers on a raft laden with emeralds and gold to the middle of the lake. There he immersed himself in the water, causing the gold to sink to the bottom. Other valuables, including gold and emeralds, were dropped into the lake by the king’s companions.

These treasures are said to be still submerged on the bed of the lake and were the likely cause of the gold rush by the European conquistadors who, according to legend, arrived in several waves in search of the riches of the earlier inhabitants. Possible proof of the existence of the ritual is seen in the legendary “Muisca raft”, which was discovered in a cave to the south-west

of Bogotá in 1969. It probably dates from the period between 600 and 1600 AD and is displayed today in the Museo del Oro in Bogotá.

## Popular destination for adventurers and nature lovers

There are consequently many reasons for tourists to visit La Calera and spend a holiday there. But until recently there was one problem: The big blowers in the plant treating the sewage of the town of 30,000 and returning the purified water to the Teusaquillo River could be heard far and wide – and also spread a powerful odour throughout the surrounding area.

Visitors to the plant had to wear ear protection and a face mask or keep a safe distance.

## Necessary expansion

The ESPUCAL ESP city works department asked KAESER for a proposal to expand and optimise the existing wastewater

treatment plant. Among the findings of the KAESER experts who surveyed the site: the airflow provided by the three blowers was not meeting the design specifications. When KAESER explained the benefits of rotary screw blowers, and in particular the possibility of generating more compressed air with less energy, the municipal officials in the La Calera – Cundinamarca district, which is responsible for the plant, opted for three EBS 380 M STC blowers with a total power rating of 111 kW.

## Expectations exceeded

The first success was seen within just three days, when the indicated oxygen level in the

plant rose to 1.3 ppm – a big improvement over the usual 0.3 ppm. The foul odour gradually faded and soon vanished entirely, while the oxygen concentration rose to around 2 ppm. From that time onward, the plant operators saw a steady increase in positive feedback: “What did you do to the wastewater plant? Did you relocate it? Have you closed it?” Before long, the positive effects of the upgrades were evident to all inhabitants of La Calera. Today tourist buses are again stopping outside the plant. Even nature has been appreciative – as seen in the reappearance of hummingbirds in the area. The plant operators were initially expecting savings of 28%, but after just

a few months of plant operations, KAESER Colombia Ltda was informed that the new system was actually achieving energy savings of approximately 80%.



Nature has also made a comeback since the switchover



The system after the optimisation project



La Calera wastewater treatment plant



# In great shape

From toys to cosmetics: Sauer Polymertechnik in Neustadt (Upper Franconia) and Föritz (Thuringia)

Drivers coming from Coburg and approaching the Sauer Polymertechnik Föritz I and Föritz II production plants – completed just a few years ago – soon see the recently completed high rack warehouse looming large in the distance. The design gracing the massive facade was created by the industrial designer and “colour philosopher” Friedrich-Ernst von Garnier. The pleasing colour scheme, with subdued green and bright blue hues, blends the building aesthetically with its natural surroundings.

The family business, established in 1938 as “Erich Sauer Hart- und Weichguss-giesserei”, now in its third generation, is headed by three of the founder’s grandchildren: Silke Sauer, Astrid von Pannwitz and Oliver Sauer. In the challenging early years before and during the Second World War, the young company initially operated as a partner of the toy industry, which has a long tradition in this region. But the company has never stood still: over the course of three decades, it developed specialised skills in extrusion blow moulding – a method for producing moulds with thermoplastic materials. In 1995, injection stretch blow moulding technology was added to the skill set, followed a year later by injection blow moulding. Today the company’s manufacturing space is spread over four plants: one in the town of Neustadt, not far from Coburg in the Upper Franconia region, the recently completed Föritz I and Föritz II plants, situated nearby in the state of Thuringia, and Sauer France, in the French region of Lorraine near the German border. With its relentless drive to adopt new solutions and willingness to make the necessary investments, the company is a technological leader in Germany, producing an impressive 6.6 million parts per day for a total of 1.4 billion parts per year.

## Design as a competitive edge

By far the largest share of Sauer Polymertechnik’s sales comes from the development and manufacturing of bottles and containers for customers in the cosmetics industry such as Schwarzkopf-Henkel, Beiersdorf and L’Oreal. Other segments include products for chemicals and home cleaning products, technical components, and the food and pharmaceutical industries. The product range also includes large hollow parts, such as children’s car seats, and especially large hollow-ware components such as sledges, chairs and baby racers. For CEO Silke Sauer, the company is much more than just a product supplier. She sees it as a service provider for the entire development, manufacturing and logistics process. For the management team, it is a top priority to study customers in detail and work with them to arrive at tailor-made solutions. As products become increasingly commoditised, design becomes the distinguishing feature. This applies especially to packaging. However, sophisticated design solutions are also in demand for technical components and large blow-moulded components. The goal is to realise customers’ visions with regard



Row after row of finished plastic bottles emerging from the extrusion blow moulding machine

to form, colour and function, as summed up in CEO Silke Sauer’s motto: “Impossible is just an attitude – not a fact.”

## Compressed air can even heat buildings

The moulding technology specialist has implemented many environmentally friendly processes through unique ideas and unconventional solutions. As a result, the heating needs for all three German sites are fully covered through carbon-neutral solutions. The trick in all of these solutions: instead of losing the heat generated in manufacturing, for example through the cooling of moulds or the operation of compressor systems, it is diverted and stored to keep the buildings warm in the winter and to produce hot water.

The figures for the recently completed Föritz II plant provide hard data demonstrating the success of these efforts. The plant has a total volume of 248,000 m<sup>3</sup> of enclosed space, requiring a heating

output of approximately 2000 kW. That is significantly less than the total process heat from chillers, compressors, booster compressors and refrigerant dryers, which amounts to 2565 kW. The utilisation of this heat energy completely eliminates the need to heat the plant with fossil fuels. During periods of partial load or downtime, the heat storage system (sprinkler tanks) delivers



Top: 10-bar compressor station with rotary screw compressors  
Bottom: 45-bar compressor station with booster compressors





*In injection stretch blow moulding, the first step is the pre-form...*

*...and the second is the finished bottle*

the necessary heat output via heat pumps. It is essential that every component operates as efficiently as possible in order to ensure cost-effective integration of all energy saving measures. Sauer Polymertechnik assures this by investing in the very latest technology when the need arises. This also applies to vacuum generation for conveying of materials: all of the standalone vacuum conveyors, with a connected power rating of approx. 200 kW, were recently removed and replaced by four high-efficiency, low-maintenance KAESER DBS 220 SFC rotary screw blowers, each with a connected power rating of 22 kW (88 kW in total).

**“In order to be great, never stop trying to be better.”**

erates an updraft power plant. It uses the exhaust heat from the water-cooled rotary screw compressors and from the tools and oil cooling of the manufacturing equipment during the winter months to create environmentally friendly heating energy at no cost. In the summer months, the superfluous heat is extracted through the updraft shaft. This unusual idea prompted Sauer management to team up with the system

supplier, Colt, in a joint entry for the 2018 Bavarian Energy Prize. We wish Sauer the very best of success – it is a company that has impressed us over and over with its many creative solutions driven by the desire to actively protect the environment.

#### 2018 Bavarian Energy Prize

In another creative solution for environmentally friendly energy production, the Sauer Polymertechnik Föritz II plant op-



*Support air control for the extrusion head*

A visit to the PrimaVera grain mill in Mühldorf am Inn

# Traditional craftsmanship with state-of-the-art technology

In Germany the concept of organic farming as we know it today began in the 1980s against the backdrop of a fundamental shift in attitudes among consumers and, of course, producers. Today the demand for organic foods is stronger than ever. PrimaVera, a grain milling operation in Mühldorf am Inn in Upper Bavaria, was among the first companies to fully embrace this trend. Today it generates approximately 90% of its sales from the processing of organic grain products.

The impressive façade of the headquarters, dating back to 1919, tells the world that this is a company with a long and proud history. The exterior conveys a pleasant sense of tradition and the “good old days”. This impression is confirmed by the respectful but cordial welcome extended to the KAESER Report team – and in the friendly interactions between the company’s management and staff. Here in the grain mill, visitors feel right at home – and the same is obviously true for the employees. But on our tour of the mill, we soon see that time has certainly not stood still at PrimaVera when it comes to the production facilities and machinery – far from it.

#### Centuries-old tradition

The first step towards establishment of the PrimaVera mill came in 1988, with the merger of two nearby milling companies:

Kobler, which dates back at least to the 17th century, and Holzner (first recorded mention in 1481). From the 1970s onward, the mills were owned by the Holzner and Kobler families, who later became the founding partners of PrimaVera Naturkornmühle. The third shareholder, who also serves as the managing director, is Josef Gaigl, who previously managed Holzner’s Stepfenmühle mill. The Rosenmühle milling company in Landshut came on board as a cooperation partner and fourth shareholder. A strong indicator of the mill’s success is the rapid expansion of the workforce since it opened: at the beginning of January 1990, the small mill had six employees. Today PrimaVera works with a team of 70 skilled staff who produce private-label ingredients at exacting standards for customers in the industrial food processing sector. The extensive portfolio includes products made





...there are no limits to human ingenuity

*The product portfolio includes mainly grains and pseudograins (buckwheat, amaranth, quinoa) and grain legumes (pulses)*

with all grains, pseudo-grains and grain legumes along with a wide range of blended products.

#### Facts and figures

PrimaVera processed approximately 50,000 tons of grain in 2017, primarily from regional organic farms, i.e. in southern Germany and Austria. To produce those enormous quantities, it would take the combined yield of approximately 18,000 acres of organically farmed cropland. That would amount to two-and-a-half times the total surface area of the nearby Chiemsee – the largest lake contained entirely in Bavaria.

A pile comprising 50,000 tons of grain is almost beyond the bounds of human imagination. On a more readily conceivable scale, this equates to eight fully loaded lorries, each carrying 25 tons of raw product, arriving each day, and another eight lorries departing from the loading dock each day, also carrying 25 tons each. The quantities of delivered and shipped goods are equal because, rather than discarding the milling by-products (e.g. groats), they are used to produce animal feed pellets. No valuable raw materials are lost in the production process.

#### Synergy of the old and new

Today the company is located in the buildings of the Walzmühle (roller mill) in Mühlendorf am Inn, which was purchased in 1990. The well-preserved exterior structure was retained and the facade was renovated in accordance with regulations regarding the preservation of buildings of historical interest. Because the building was required to incorporate complex, modern milling technology, the interior had to be gutted completely. The installation of state-of-the-art equipment, from grain receiving to shipment, in the properties, some of which were listed as heritage buildings, posed major challenges for those in charge. As the tour of the production facilities impressively demonstrated, however, all hurdles were expertly surmounted. “Every time a new machine was added, we had to find a spot for it somewhere. So far we’ve always managed,” says Hartwig Lichtenegger, the head of maintenance and production.

Today a broad range of products is produced using entirely independent production facilities. To meet customers’ widely varying expectations, numerous silos are on hand for different raw materials, intermediate goods and finished products. On several floors, advanced computer-controlled equipment conveys, cleans, filters, mills and packs the grain. The small yellow rotary lobe blowers

from KAESER, which supply individual machines with the necessary compressed air they need for conveying product and cleaning the many filter systems, are in operation everywhere.

#### Ingenious solution for space restrictions

When it came to finding space for the rotary screw compressors, the situation was somewhat different: the system had to be repeatedly expanded as the compressed air requirements increased. Until last year, it had somehow always been possible to add new machinery by moving things here and there within the mill. However, there was no longer enough room in the basement for the latest upgrade of the compressor station last year, necessitated after the production facilities were expanded in 2016.

But the solution is as simple as it was ingenious: like a bird’s nest, the container station now reigns supreme over the lorry unloading yard. What was once empty space was the ideal location in every respect for setting up the compressed air station. A special “housing” enclosure was retrofitted to shelter the state-of-the-art rotary screw compressor station comprising three ASD 37 and two BSD 75 units together with air treatment equipment and a SIGMA AIR MANAGER 4.0 master



*Compressed air is needed for product conveying*



*The finished product is packed and placed on shipping pallets*

controller – convincing proof that there are no limits to human ingenuity. Or, to adapt the words of the Roman philosopher Seneca: “Where there’s a will, there’s a way.”



*Rotary screw compressors from KAESER: the compressed air stations are positioned near the air-consuming equipment*



*The various grain types are transported through the tubes for further processing*



Into the future with ADA<sup>1)</sup> and KESS<sup>2)</sup>: Bright Print Group, Sydney

# An Australian family story

The Bright Print Group is a family-managed printing business headquartered in Sydney and Newcastle, Australia. The business was formed in 1962 and is still owned by the founding family today. Full-colour printing, digital printing, binding and finishing are just a few of the printing services offered by Bright.

The company started in 1962 with just one linotype machine in a garage-like shed in the back yard of founder William Robert Bright, the grandfather of today's managing director Deborah Burgess Bright and her brother John Bright. The tiny printing operation, with little more than 20 m<sup>2</sup> of floor space, was a success, and got bigger as its customer base grew. Other family members joined the small business, still known in those days as W. R. Bright & Sons. Now, more than 50 years later, the company is headquartered in an impressive 7,500 m<sup>2</sup>

facility, built in 1996 in Wetherill Park, just outside of Sydney. Here it uses the latest technologies and printing processes to offer a wide spectrum of end products – business cards and magazines, posters, POS materials, books and brochures and much more – to generally long-established customers.

## Into the future

The company's growth is showing no signs of slowing down either: with the introduction of large-format printing in 2015 and



**KAESER was commissioned to carry out a complete ADA analysis of the existing compressor system**



**Bright Print replaced an outdated compressor with a new KAESER AIRCENTER SK 25**

the takeover of a commercial printing and promotional product business in Newcastle, Australia in 2017, Bright has made further additions to its product and service portfolio. These developments have had a big impact on the compressed air systems as well.

The production processes at Bright use large quantities of compressed air. It is required almost everywhere, from the printing presses, laser cutters and paper cutting machines to the laminating, trimming and stapling machines. From the very outset, it was clear to managing director Debbie Burgess Bright – who was chosen by Western Sydney University as the winner of the 2016 Woman of the West Award – that a detailed assessment of the compressed air system would be needed to create a fully efficient production facility at the new location.

## Lean production

As a company with quality and environmental certifications, Bright has implemented a number of other environmental initiatives over the years. All employees recently underwent Level III lean manufacturing certification. This concept will help the company to operate a highly efficient production facility. It thus comes as no surprise that the first step for Bright was to request a comprehensive analysis of compressed air requirements. Long-standing compressed air partner KAESER COMPRESSORS consequently performed a complete air demand

analysis (ADA) for the existing compressed air system. This assessment was carried out using the KAESER Energy Saving System (KESS).

## Saving energy and money with ADA and KESS

In light of the analysis, Bright's managers chose to keep the KAESER SK 15 AIRCENTER but to replace the aging legacy compressor at the acquired company – built by a different manufacturer – with a new KAESER SK 25 AIRCENTER. This decision has paid off. The management team is delighted with the lower energy costs and

## The production processes at Bright use large volumes of compressed air

the considerable environmental benefits. Summing up the results, Debbie Burgess Bright says: "With the recent developments to our business that are now taking us into new markets and increasing the depth of services we offer, it was important for us to find a compressed air solution that would be able to meet our new requirements not just today, but also for the next 5 to 10 years. We are certainly pleased with the final configuration which is already proving to be highly reliable."

<sup>1)</sup> ADA = Air Demand Analysis

<sup>2)</sup> KESS = KAESER Energy Saving System



**Compressed air is used in many areas at Bright Print, from the printing presses to the laser cutter and the paper cutting machines through to the large-format printers**





For maximum travel comfort: the ultimate in luxury motor coaches

# The lure of luxury



Television programs offering viewers a peek into the exclusive lifestyles of the rich and famous have become increasingly popular since the 1990s. Everyone has their own personal notion of luxury. Indeed, since the 1990s, a new class of vehicle has taken its place among the objects of desire that make certain people's hearts flutter: the ultra-high-end luxury coach.

## How it all started

Back in the early 1990s, Featherlite made its name among NASCAR motor sport stars in the USA as the leading manufacturer of innovative trailers and racing car carriers. From there it was only a small step to the trailblazing idea to build luxury coaches. Motor sport teams and their family mem-

bers could now enjoy the comforts of home throughout the racing season. The search was soon on for an experienced partner with the necessary know-how to create exclusive interiors to please the most demanding buyers. This partner was found when Featherlite joined forces with the yacht manufacturer Vantaré. The first result

of their cooperation was presented in 1991 at the world's largest international boat show in Orlando, Florida, with the premiere of the Featherlite coach, featuring an interior reminiscent of a high-end cabin cruiser.

## Luxury as far as the eye can see

Today Featherlite, has its manufacturing operations in Suffolk, Virginia, where it has been located since 2009 under the ownership of the Adams family. It produces 10–12 bespoke coaches per year, including luxury motor homes and luxury coaches for group and business travel. Mark Eisenhart, the head of sales and marketing, explains: "Our focus is on individual, tailor-made solutions. That means more than just accommodating special requests. Instead of offering customers a menu of options, we listen to what they want and integrate the specific, high-end functions they ask for." Every coach reflects the style, tastes and personality of its owner. "We develop a close relationship with our customers," he continues. "They expect and deserve the best possible product and we are obsessed with offering them that luxury."

## Inner values

The coach body by Prevost consists of a stainless steel structure with an aluminium shell. With its integrated chassis and body structure, Prevost – which is part of the Volvo Group – offers the strongest and safest chassis in the industry. Full-length sliding windows and a Volvo D13 engine come as standard. "That lets us add practically anything – tile flooring, high-end equipment, 60" HD TV, game consoles and wifi – whatever the owner asks for." Naturally all coaches are also equipped with driving and safety functions such as Electronic Stability Control and Aware Adaptive Cruise Control. Regardless of whether the coach is on the road or parked at an event location, it offers the same standards of comfort and safety.

## Perfection as a business principle

Perfection in every aspect of the business is the guiding principle for relationships with customers and employees. "The Adams family and our management team are committed to creating a secure and supportive environment where employees are motivated and take pride in their work. This sense of satisfaction and pride is evident in the final result. Our product quality is an emotional experience," says marketing manager Mark Eisenhart.

The management team has prioritised key investments in the production facility. "Everything that enters this building reflects the high quality of our products and services," says company president Jimmy Adams. A reliable source of clean and dry compressed air is essential for all of the compressed air tools for grinding and fin-





ishing and for the paint spray booth. That made a KAESER compressed air system the obvious choice for Featherlite. The company currently operates an ASK 28 T series rotary screw compressor with integrated dryer and a SmartPipe® compressed air distribution system.



Everything that enters the building reflects the high quality of our products and services



The luxurious Featherlite interiors are tailored to the tastes and comfort standards of each individual customer

New i.Comp 3 series delivers flow rates up to 160 l/min and pressure up to 11 bar

# Compact, but packs a punch!

The new, compact, easy-to-use “trades compressor with a difference” is packed with 100 years of experience. In this latest addition to the KAESER compressor family, meticulous care in compressor block manufacture and system construction has again produced a system with legendary KAESER quality and innovation.

Every i.Comp compressor is equipped with a Made in Germany compressor block from KAESER. These blocks are manufactured onsite at KAESER's Coburg production plant, where the complete systems are also assembled and tested. High-quality materials and precise assembly ensure maximum compressed air performance and long service life. The LwA, VDE and CE symbols guarantee that the i.Comp conforms to all legal requirements.

### The “DIFFERENCE”: so much more than the sum of its parts

The variable speed motor of the i.Comp 3 combines a number of advantages. It provides exactly as much compressed air as the user needs for the task at hand – at a constant pressure of 11 bar. The compressor also delivers reliable and trouble-free performance even at the maximum permitted electrical cable length of 150 metres,

making it the perfect partner on any building site. Thanks to the variable speed motor, which eliminates the need for an air receiver, the i.Comp 3 is lightweight and compact: weighing in at just 25 kg and equipped with an ergonomic enclosure, it is easy to carry and fits right in to all kinds of operating locations. This compressor is also available in a mobile version with rugged wheels suitable for rough terrain. When transported to the site, it can also be placed in a space-saving horizontal position.

Since the i.Comp 3 compressor uses an oil-free compression system, maintenance requirement is kept to an absolute minimum. There is no need to check or top up the oil level – or, of course, to perform an annual oil change. In addition, no oil can find its way into the compressed air, which means that there is no oil-contaminated condensate to deal with or associated resulting disposal costs. Furthermore, an innovative design solution automatically evaporates the oil-free condensate with no residue. In the i.Comp 3, air is drawn in through the piston head – a design feature



that significantly improves efficiency and ensures long service life – amongst other benefits.

### i.Comp Control

The i.Comp Control was specially developed for this “trades compressor with a difference”. It detects the real-time pressure signal in the integrated flow volume control and adjusts the motor so that output performance meets the required pressure. Pressure can be precisely adjusted easily and conveniently using the controller's arrow keys. The compressor is also equipped with a maintenance indicator, whilst clear icons and symbols on the i.Comp controller make operation easy and intuitive.





PE enclosure for MOBILAIR portable compressors

# Sweet Sixteen – anniversary of a milestone

KAESER KOMPRESSOREN launched its portable MOBILAIR M26 compressor featuring a roto-moulded polyethylene sound enclosure back in 2002. It was an immediate sensation. KAESER was the first manufacturer to use this material for a portable compressor enclosure.

Up until then, most manufacturers used metal enclosures with limited scope for styling. Polyethylene now made it possible to create an enclosure with design features previously associated with auto body styling, with innovative visual details expressing the sophisticated industrial standards of the equipment. The results were more than respectable.

## Put to the test – and passing with flying colours

But the original M26 was not only futuristic on the outside. The performance specifications were equally advanced. Industry experts scrutinised it from every angle and even bashed it with sledgehammers. The roto-moulded PE enclosure still passes the hammer test today – as impressively demonstrated in this video:



<https://www.youtube.com/watch?v=2wAa53UWekk>

## Durability and quiet operation

The surface is impact and scratch resistant and does not rust. This ensures long-term value retention and means that the unit always looks at its best no matter what the operating conditions.

The original M26 model has since been succeeded by the M27, and the range of MOBILAIR compressors offered with the PE enclosure has been expanded by three models in both directions. Customers can now choose from the MOBILAIR M13,

## Alternative colours

In addition to the standard KAESER yellow, a number of other special colours are also available: the units can be supplied in popular road-going colours such as orange, red, green and blue with no effect on delivery time. Further enclosure colours and custom paintwork options are available upon request. The legendary BAUMA tower featuring bright coloured PE enclosure MOBILAIR compressors has guided visitors to the KAESER stand since 2004. It will

## Lightweight – durable – powerful

M17, M20, M27, M31, M43 and M50 models with the PE enclosure. The model series covers an output range of 1–5 m³/min. Alongside the portable compressors with combustion engines, KAESER has also added electric-powered units as a quieter, exhaust-free alternative. Whatever model you choose, all systems share the same common characteristics: they are quiet, lightweight, compact and, above all, reliable. The wide-opening enclosure makes it easy to access the interior, while the double-walled construction ensures excellent sound-proofing.

be there again when the BAUMA opens in Munich in April 2019. Needless to say, KAESER will be in on the action as always and will present various new models, naturally with PE enclosures, as it did in 2002 with the revolutionary M26.





## i.Comp Tower 8 and 9 –

The difference: so much more than the sum of its parts

### Deployable worldwide

Flow rate: 412 to 580 l/min

### SIGMA NETWORK capability

Can be linked to the SAM 4.0 via  
SIGMA CONTROL 2

### Oil-free

Minimal maintenance requirement

### Economical

Variable-speed motor and  
SIGMA CONTROL 2

### Ready-to-run

Reciprocating compressor and  
refrigeration dryer housed  
within a single all-in-one package  
(plug-and-play)

### Consistent pressure

Single-stage 11 bar



### Exceptional

efficiency, compact footprint

**100 %  
duty cycle**

### Roto-moulded polyethylene enclosure

Sound-insulated, quiet,  
scratch-resistant, assures  
excellent value retention



**KAESER KOMPRESSOREN – More compressed air for less energy**