MOBILITY FOR WORK
ALUCA-2-go – a work cabinet you can take with you

CLEVER ACTUATOR
HOERBIGER and Eckart supply outstanding integrated solutions for industrial valves
“WE AIM TO PROVIDE OUR CUSTOMERS WITH PRODUCTS AND SERVICES THAT CREATE VALUE AND CONTRIBUTE DEMONSTRABLY TO THEIR SUCCESS.”
In July 2016 I took over leadership of the HOERBIGER Group from Dr. Martin Komischke. Together with the 7,000 employees of HOERBIGER, I am very proud to be there for you, our customers.

HOERBIGER is a company that is accomplishing great things in many parts of the world – together with customers who have put their trust in our performance and dedication.

In our daily work, the requirements and expectations of our large, internationally positioned customers are just as important as the concerns of our numerous middle-market customers. Wherever we operate, we aim to provide our customers with products and services that create value and contribute demonstrably to their success.

Our electrohydraulic valve actuators are an example of a business segment that we have built up in recent years with this goal in mind. In the opening article of this issue of HOERBIGER@MOTION, I am pleased to present to you Eckart GmbH, a company that has enjoyed success with the TriVAX™ electrohydraulic valve actuator developed by HOERBIGER.

In addition to our TriVAX™ valve actuator, we are also proud of xetto®. The xetto® is especially an aid to people working in the trades. The need for fewer personnel when transporting heavy loads and significantly lower health risks are advantages that are obvious from the start and pay off in the long run.

With xetto®, HOERBIGER can offer a complete off-the-shelf system for the first time. End customers in the trades can buy the xetto® from top sales partners like the vehicle outfitter ALUCA, which we also introduce in this issue of our customer magazine.

In recent months we decided on the implementation of a comprehensive reorganization of our Strategic Business Unit Compression Technology, as well as a reorientation for the Strategic Business Unit Drive Technology.

In the Strategic Business Unit Compression Technology we have a total of eleven market-oriented business units giving us more exposure than ever to the challenges of our markets and customers. In order to provide our customers internationally with the best possible support in the Strategic Business Unit Drive Technology, we expanded the responsibilities of our international key account managers.

HOERBIGER@MOTION reflects these new structures. The editorial team is endeavoring to present our readers with examples of performance and innovation with high customer value in as many business segments as possible. This is what the HOERBIGER brand is about.

Together with all our employees, I look forward to working with you, our customers, to achieve joint success.

Dr. Jürgen Zeschky
CEO and Chairman of the Executive Board
HOERBIGER Holding AG
FOCUS: CLEVER ACTUATOR FOR INDUSTRIAL VALVES

Eckart GmbH, located in Schlüchtern, Germany, is one of the world’s leading manufacturers of hydraulic servo drives. In conjunction with the HOERBIGER TriVAX™, the products manufactured by Eckart are a technologically exceptional solution for the automation of industrial valves.

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CLEVER ACTUATOR FOR INDUSTRIAL VALVES
Automated valves are the heart of every process system. Using a shut-off element, they control pressurized liquid or gaseous substance flows and ensure that oil, gas, chemicals, and water reach the right location at the right time in the right amount. Precision, speed, reliability, and durability are the main areas of concern in these key components to ensure efficient plant operations. “This is exactly where the strengths of our hydraulic HyRAV actuator lie,” says Markus Eckart, Managing Director of family-operated Eckart GmbH, which employs a staff of approximately 130 at its Schlüchtern site.

The dual-action or single-action hydraulic drives – which operate according to the helical gear principle, and in an industrial environment are also referred to as swivel motors/rotary drives – are extremely compact. They transmit torques ranging from 500 to 250,000 newton meters (369 to 184,390 foot-pound force) and achieve actuating times (open/closed) of 0.2 to 200 seconds. Optimal end-of-stroke damping ensures that the drive and valve are not subjected to excessive strain during operation. What’s more, the hydraulic valve actuators are maintenance-free, and they don’t even require lubrication. The drives developed and produced by Eckart also set standards in terms of durability. In a test installation, 100 million strokes were recorded – without significant signs of wear.

These superior performance features make hydraulic servo drives attractive for a wide range of applications. They are used, among other things, for applications in power plants, mining, refineries, pipelines and tank farms, waterworks, sewage treatment plants, shipbuilding, HVAC, the food industry, and steel mills.

Hydraulic servo drives are one of three critical components in valve automation, which comprise the valve itself, the drive, and the power unit. This is where the HOERBIGER TriVAX™ comes into play. With its integrated control electronics, the

1 Eckart GmbH has approximately 130 employees at its Schlüchtern site.
2 The TriVAX™ is the intelligent control center for the overall product.
3 The drives produced by Eckart set standards in terms of durability.

Precision is one of the top priorities in the production of the actuators.
TriVAX™ is the intelligent control center of the overall product. It ensures that the HyRAV actuator carries out the movement required for controlling valves with precision – and with minimal setup. Customers benefit from drastically reduced commissioning times, which thus save them money.

Thanks to its piping-free design, the TriVAX™ is as easy to install as an electric actuator. Handling is also equally simple. The intuitive graphic user interface is the core element of the product, as it allows the user to configure and operate the TriVAX™. The display indicates the position and operating state, and enables easy control and programming without the need to open the housing or remove covers.

“The TriVAX™ is an optimal solution and represents a win-win situation for HOERBIGER and us,” says Eckart. As a long-standing partner of HOERBIGER, Eckart GmbH was informed about the development of the TriVAX™ from the very start. “When HOERBIGER approached us with the idea of developing a compact power pack for the valve industry, we were incredibly excited,” says Eckart. The reason was that end customers in the valve environment have been increasingly calling for fully configured integrated solutions for their applications. The trend has been leading away from individual components for quite some time, since this entails high installation complexity for the end user. Even a technologically leading component supplier like Eckart has difficulty placing its products in such an environment. In contrast, the combination of a perfectly matched drive and power unit, as offered by Eckart and HOERBIGER, opens up new market opportunities for both companies.

Eckart and HOERBIGER work closely together before an overall system is shipped, and their collaboration extends far beyond the mere purchase of components. Eckart delivers the majority of its drives to HOERBIGER in Altenstadt, Germany, where HOERBIGER technicians assemble them with the TriVAX™ to form a complete system. After being put through their paces, the fully assembled systems find their way via valve manufacturers or specialized dealers to the end customer.

“In my view, it is also crucial for our joint success that HOERBIGER is a partner that shares a similar philosophy,” explains Eckart. “Eckart GmbH has uncompromising quality standards and seeks technologically superior solutions at competitive prices. In my view, this makes us a perfect fit for HOERBIGER.”
In the oil and gas industry as well as in the power plant sector, safety in particular means having all media flows constantly under control. Gas, steam, and flammable liquids are a special challenge for the safety concept not only in the planning phases, but also in day-to-day operations.

The HOERBIGER TriVAX™ product family provides confidence through traceable, proven, transparent safety functions. Along with the HOERBIGER developed Smart Partial Stroke Test, which puts the valves through the paces, elements include a hydraulic circuit safety system with high-quality components as well as a pressure-resistant, enclosed housing that fulfills requirements for operation in potentially explosive atmospheres.

Thanks to integrated interfaces between the standard field buses, the TriVAX™ can be quickly integrated into existing automation concepts. Particularly with expansive facilities or pipelines, in which the shut-off valves are often kilometers apart, the valves can be controlled via a simple electrical signal.

**EXPERIENCE SAFETY AND SIMPLICITY**

Interactive displays allow visitors to the HOERBIGER booth to trigger safety functions and see for themselves what happens, from a simulated power failure all the way to a dangerous increase in pressure. Visitors can also try out the simple commissioning of the TriVAX™. All of this exclusively at the HOERBIGER booth at Valve World.
ALUCA and HOERBIGER

TWO STRONG PARTNERS
ALUCA-2-go is an innovation you can take with you. A good number of attendees at the IAA Commercial Vehicles in Hanover, Germany, would have liked to do just that. The novel product concept based on the HOERBIGER xetto® created by renowned vehicle outfitter ALUCA drew a large audience at the trade show.

Text: Peter Weidenhammer  Photography: Peter Hartung

1 Mobile workplace: The xetto® allows tools and materials to be loaded and unloaded effortlessly and moved to a job site.

2 Aluminum is a lightweight, corrosion-resistant, extremely durable material that offers high stability and can withstand heavy payloads.

3 International focus: ALUCA is part of the Dutch family business PON, which is a leading importer of Volkswagen in the Netherlands and the largest provider of industrial truck leasing in the United States.

ALUCA-2-go completely reinvents the notion of the mobile workplace: A single person can load, unload, lift, and move tools, materials, and parts weighing as much as 250 kilograms (550 pounds) to a job site effortlessly. The work cabinet ALUCA-2-go allows work to start immediately, making long, time-consuming trips between the job site and the vehicle a thing of the past. The key to this is the xetto®, the backbone of ALUCA-2-go. Nothing has ever been offered that comes even close to this mobile loading device made by HOERBIGER. The stand-alone scissor pallet truck is equipped with a carriage with integrated micro hydraulics, along with energy supply, and can be collapsed to a height of about 20 centimeters (8 inches), saving space when storing the device in any common commercial van. The compact system is only 1.40 meters (55 inches) long and 83 centimeters (33 inches) wide. For unloading, the carriage is first pulled out of the underbody of the xetto® and extended to the loading floor height at the push of a button. It is then possible to easily pull the transport cart
onto the carriage, which afterward can be lowered in a controlled manner. And there you have it: the mobile workplace. The loading process is exactly reversed. As a result of the maximum lift of just under 80 centimeters (32 inches), ALUCA-2-go can also be positioned at a comfortable work height at the job site. ALUCA's mobile work cabinet is only one possible application for the xetto® – there are practically no limits to the multifaceted possibilities of the mobile platform.

ALUCA GmbH manufactures upscale vehicle fittings made entirely of aluminum and is considered one of Germany's top suppliers in the premium segment. The company based in the south of Germany focuses on customized solutions for commercial vans and light commercial vehicles of all brands. All fittings are made in Germany and ensure maximum stability and ergonomics. Aluminum is a lightweight, corrosion-resistant, extremely durable material that offers high stability and can withstand heavy payloads. Since June 2016, ALUCA has doubled its warranty period by offering a premium warranty of eight years on new vehicle fitting orders.

ALUCA is part of the internationally operating Dutch family business PON, which is a leading importer of Volkswagen in the Netherlands and the largest provider of industrial truck leasing in the United States. The fact that the concepts of a portable workstation and a mobile loading aid ideally complement each other is symbolic of the sales partnership between ALUCA and HOERBIGER. For many years, vehicle fittings specialist ALUCA has been synonymous with well-engineered designs, durable systems, as well as a high level of perfection and reliability when it comes to implementation and execution. The two companies share this corporate culture.

There are also synergies in terms of the product: ALUCA's vehicle racking and storage systems are made of aluminum and therefore weigh on 95 kilograms (210 pounds). The xetto® has a lightweight design and is made predominantly of aluminum. The payloads that commercial vehicles can and are allowed to carry are limited. Lighter in-vehicle storage equipment allows craftspeople to add more weight than before.

HOERBIGER is entering uncharted territory not only with the xetto® product, but also in the sales partnership with ALUCA. For the first time, a product made by the HOERBIGER Group is directly geared toward the end customer, and it can be accessed via multiple channels: Interested buyers will find the xetto® in brick-and-mortar stores, such as home stores, in upscale specialized tool and electrical stores, as well as from companies offering vehicle fittings. What craftspeople and vehicle outfitters alike appreciate the most about the xetto® is that it is not tied to any particular vehicle. No attachments or modifications to the commercial vehicle are necessary, and in contrast to other systems, the xetto® preserves its value because it remains with the company, not in the vehicle, at the end of the leasing term.
During the market launch, the xetto® is available in Germany and Austria via a network of distributors. After that, the sales partnership with ALUCA and its parent PON will be expanded internationally. The focus during the next phase will be on the Belgian, Dutch, Luxembourg, and Swiss markets. In the Benelux countries, the xetto® will be launched by MODIFORCE, a subsidiary of PON specializing in vehicle storage and racking systems.

1 High level of perfection: for many years, vehicle fittings specialist ALUCA has been synonymous with well-engineered designs, durable systems, and reliability when it comes to implementation and execution.

2 Upscale fittings: ALUCA manufactures vehicle fittings made entirely of aluminum. The solutions are developed specifically for the customer and ensure maximum stability.

3 Innovative working: tools and materials can be transported effortlessly to the job site, where work can start immediately.

4 Strong loading aid: as much as 250 kilograms of tools and materials can be loaded and unloaded with ease.
SAFE INDULGENCE
Similarly to a perfumer who creates complex scents from a whole host of base materials, flavorists at Silesia compose flavors from thousands of substances and semi-finished goods. In terms of the substances that are used, a distinction can be made between individual substances (flavoring agents), complex mixtures such as flavor extracts, smoke flavorings, and culinary products. Flavoring agents are considered natural if they satisfy defined requirements. The raw materials for aroma extracts, which are typically obtained from fruits, herbs, spices, and vegetables by way of distillation, extraction, and other separating processes, are regarded as natural components per se. Natural flavors are composed solely of substances from these two raw material categories. If further substances from other categories are used in a composition, the term “natural” must be eliminated in the declaration of the flavor. “Only a fraction of the world’s demand for industrially produced foods that have an appealing taste can be covered by directly adding or processing fresh fruit, herbs, and spices,” says Silesia’s Managing Director Michael Mausbach. The use of flavors makes multifaceted taste experiences and enjoyment possible, and ultimately also affordable, for the global population at large.

At the Kalkar location, Silesia focuses on the production of flavor powders for the food industry. Mausbach on the investment in an additional manufacturing facility: “Our construction of an additional plant in Kalkar was in response to the rising demand for flavor powders. Our capacity for producing these powders at our parent location in Neuss had reached its limits.”

The relocation not only resulted in more space for an expansion of the manufacturing operation and for modern control equipment, but also necessitated innovative explosion protection solutions, since a wide variety of technologies, such as spray drying, granulation, and extrusion, are used to produce flavors. These technologies allow liquid substances to be converted into powders, for example. Spray drying is a process where a liquid flavor is processed into an emulsion with water and various carriers. The emulsion is injected via nozzles into the spray tower, where it is converted into dry powder.

Technical Plant Manager Michael Tacke explains: “Potentially explosive dust/air mixtures in the atomizer dryer cannot be entirely precluded in the thermal drying process we use. While the average dust concentration is generally below the temperature-based explosion limit, the majority of atomizer dryers are tapered in the discharge area, meaning that an explosive dust concentration cannot be completely eliminated.”

In addition, the product can undergo an exothermic decomposition reaction. Caking or films can develop on the dryer walls.
1 In the event of an incipient explosion, IEP Technologies’ explosion suppression system provides a safe environment.
2 Flavorists at Silesia compose flavors from thousands of substances and semi-finished goods.
3 Silesia Managing Director Michael Mausbach: “As a result of the increased demand for flavor powders, our owner Clemens Hanke is investing in an additional production facility in Kalkar.”
The new plant in Kalkar necessitated innovative explosion protection solutions, since a wide variety of technologies, such as spray drying, granulation, and extrusion, are used to produce flavors and potentially explosive dust/air mixtures cannot be entirely avoided.
In the worst-case scenario, these heat to a smoldering temperature, and as a result of the high air intake temperature in the atomizer dryer, form pockets of embers. These ember pockets can trigger a fire or a dust explosion, depending on the ignition properties.

**BEST-POSSIBLE SAFETY**

Comprehensive explosion protection solutions from IEP Technologies, a member of the HOERBIGER Group, were implemented in the planning of Silesia’s systems. These solutions offer efficient and sustainable protection to both the employees and the production equipment. “Our top priority is, of course, to protect lives and prevent disruptions in production,” says Managing Director Michael Mausbach. “In our company, the need for and significance of advanced explosion protection has increased dramatically as a result of continuing technological progress, as well as the trend toward ever-larger production units with higher manufacturing volumes.”

In the event of an incipient explosion, IEP Technologies’ explosion suppression system ensures a safe environment. Within milliseconds, dynamic pressure sensors detect the increased explosion pressure, and the explosion flames are quenched by extinguishant powder. This reduces the maximum explosion overpressure that is to be expected to below the system’s pressure resistance limit. The explosion suppression system at flavor expert Silesia includes the detector system, the control unit, and the high-rate discharge (HRD) dry chemical extinguishers. The extinguishers are loaded with sodium bicarbonate-based powder suppressant and pressurized to 60 bar with nitrogen. Special-purpose valves make the entire cross-section available for the powder in a matter of milliseconds. A special nozzle system was installed to achieve optimal and uniform distribution of the extinguishant in the dryer to be protected.

In addition to implementing the explosion suppression solutions, IEP Technologies is also in charge of conducting regular service. The system was optimally tailored to the equipment being operated and provides Silesia with a state-of-the-art, cost-effective explosion mitigation measure against a potential dust explosion. Tacke sums it up: “This safety solution not only protects our colleagues at the workplace, but also helps us achieve an efficient flow of production.”
COMPRESSOR TO GO

PSE Engineering GmbH, an authorized Ariel compressor distributor and packager, offers tailor-made solutions for reciprocating compressors – ensuring that end customers save energy and cut costs, thanks to HOERBIGER technology.

Text: Kathrin Wildemann  Photography: Ralf Baumgarten, Klaus Fricke

Most people think of it as a very simple process: To store natural gas in an underground reservoir, for example, a compressor is necessary to pump the compressed gas into the cavern. So all you need to do is buy the right compressor, hook it up, and you’re in business. If it were only that simple. In reality, the compressor undergoes a complex process before it is operational. It has to be outfitted with a motor, for one. Plus, the compressor has to be tailored to the customer’s needs and adapted so that it adheres to process requirements.

“This is where we come in,” explains Hans-Günter Behrendt, Shareholder of PSE Engineering GmbH.

The company, whose headquarters are in Quakenbrück, Germany, specializes in the planning and engineering of plant and underground storage technology. The Compressor Technology area at the Hannover location serves as what is known as a packager, which designs, produces, and services customized complete and ready-to-use compressor systems. Throughout this process, the compressor experts make

The PSE compressors are shipped completely preassembled. The time savings for customers is significant: the systems from PSE, which can be transported in one piece, are ready to use within six to eight weeks.
1 Thanks to many years of compression technology experience, PSE specialists know exactly which modifications will benefit the user the most.

2 The company has grown from initially 16 employees to a staff of 200 and has locations in Hanover and Düsseldorf, Germany, as well as in Ploieşti and Constanţa, Romania.

3 All components are carefully matched. The PSE team is impressed by the HOERBIGER HydroCOM control system.

4 All three value the flexibility and reliability of HOERBIGER technology (from left): Dirk Heyer, Director Compression Systems, Bernd Schmidt, Head of Sales Compression Systems, and Hans-Günter Behrendt, Shareholder of PSE Engineering GmbH.
decisions on the drive system, cooler, and pipelines, along with all the instrumentation necessary for the customer’s needs.

The PSE team can look back on many years of experience as a packaging service provider. In 1996, the company began to collaborate with Finnish engine manufacturer Wärtsilä and Maschinenbau Halberstadt GmbH as partners for Ariel Corporation. Following several restructuring phases, this alliance emerged in 2007 as PSE Engineering GmbH.

The company has grown from initially 16 employees to a staff of 200 and has locations in Hanover and Düsseldorf, Germany, as well as in Ploiești and Constanța, Romania. As an authorized Ariel compressor distributor, PSE has the necessary technical expertise for all areas related to the petrochemical industry, biogas, and onshore and offshore gas applications.

**TURNKEY SYSTEMS**

Thanks to their many years of experience in compressor technology, PSE’s specialists are able to design the thermo-dynamic aspects of Ariel compressors in-house for the desired process conditions. They know exactly which modifications will benefit the user the most. The packager purchases the individual components – motors, compressors, controls, and the lubricating and monitoring systems. “I like to compare our process to Formula One,” says Behrendt. “A racing team like Red Bull does not build their own engines. Nonetheless, they have the expertise to put out a world-class race car.”

PSE assembles all carefully selected and matched components on a steel frame. “The bottom line is that our products are plug-and-play capable,” adds Dirk Heyer, PSE’s Director of Compressor Technology. “We ship the system completely preassembled. All you need to do is to connect it and push the start button.” The time savings for customers are enormous: Large systems shipped as modules can take as much as half a year to assemble on site. The systems from PSE, which can be transported in one piece, are ready to use within six to eight weeks.

**ENERGY EFFICIENCY AND COST SAVINGS**

Another important unique selling proposition of PSE is that the company is the world’s leading packager when it comes to equipping Ariel compressors with HydroCOM made by HOERBIGER. The control system allows stepless adjustment of the compressed gas volume to the current need, ensuring maximum efficiency in the operation of the compressor.

PSE values the flexibility and reliability of HOERBIGER technology: “As a packager, we are the ones who ultimately face the customer with the product. As a result, we attach great importance to upscale performance-defining components,” explains Behrendt. “If you try to avoid lossy bypass solutions or expensive inverters for frequency-controlled motors, there is no competitive product for HydroCOM in terms of capacity control.”

PSE’s customers also share this opinion: One operator of natural gas storage reservoirs in the Czech Republic had two compressors upgraded with HydroCOM units back in 2007. The results spoke for themselves, and on the occasion of opening another reservoir this year, the company placed an order to equip all new compressors with the control system.

After many years of positive experiences with HydroCOM, PSE recommended that OMV Austria Exploration & Production GmbH also employ the HOERBIGER eHydroCOM for the first time. This follow-on product of the proven hydraulic control system is entirely electric. PSE’s expertise is also influential outside the natural gas sector: the experts from Hanover delivered a hydrogen compressor for a Russian project – equipped with a HOERBIGER HydroCOM control unit, of course.
Crude oil refineries are highly energy intensive. The associated emissions pose a problem, especially in densely populated areas. Technologies made by HOERBIGER allow processes in the oil and gas industry to become more efficient – and last year helped Singapore Refining Company win a distinction in the renowned Energy Efficiency National Partners Awards.

ACCLAIMED EFFICIENCY

Crude oil refineries are highly energy intensive. The associated emissions pose a problem, especially in densely populated areas. Technologies made by HOERBIGER allow processes in the oil and gas industry to become more efficient – and last year helped Singapore Refining Company win a distinction in the renowned Energy Efficiency National Partners Awards.


Singapore – for most people the quintessential modern Asian metropolis. With a population density of approximately 7,700 inhabitants per square kilometer (0.4 square mile), the city-state ranks third among the most densely populated countries in the world. Environmental standards are therefore important: Singapore is considered one of Asia’s greenest cities and boasts ambitious and stringent environmental standards, especially in terms of CO₂ emissions.

Founded in 1979, Singapore Refining Company Private Limited (SRC), a joint venture between Singapore Petroleum Company and Chevron, is one of the large refining companies in the city-state. The plant – which is located on Jurong Island, an industrial park on an artificial island directly off Singapore’s west coast – is able to process as much as 290,000 barrels of crude oil per day. The ecological influence on Singapore is accordingly high. “Greater energy efficiency also gives us a strategic edge as a refinery,” says Aaron Quek, Energy Manager at SRC. “Lower energy consumption not only decreases our energy costs, but also emissions. This, in turn, improves the air quality for the people here,” he continues. By 2020, as part of its Health, Safety, Environment, Quality (HSEQ) program, SRC has committed to reducing its energy consumption by 10 percent over 2010.

MAKING COMPRESSORS SMARTER

One possible starting point to achieve savings is the compressors, which compress the hydrogen used in the hydrocracker process. When the compressors are not operated at full utilization, they compress more gas with every pass than is needed, which is then recirculated without being used. This equates to lost energy. In the quest for a solution, SRC came across the HydroCOM control system from HOERBIGER. This technology allows stepless control of the amount of compressed gas in reciprocating compressors and ensures that the energy expended for compression does not exceed the amount that is in fact required. The project was kicked off in February 2014. In the framework of an on-site assessment, a team of HOERBIGER specialists and SRC engineers determined which compressor would be best suited for the upgrade with the control system. In the end they selected a 4303-JB compressor. “Afterwards, everything went very fast,” recalls Weihan Yu from HOERBIGER KT Asia Services Pte. Ltd. “Management already gave the green light for the retrofit in March. In December, the com-
The Singapore Refining Company Private Limited is located on Jurong Island, an artificial island directly off Singapore’s west coast.

Dr. Amy Khor (right), Senior Minister of the State for the Environment and Water Resources, presented Aaron Quek from SRC with an EENP Award in the framework of the National Energy Efficiency Conference on October 6, 2015.

The compressor went into operation, equipped with the HydroCOM,” he explains. An analysis in May 2015 established that the conversion was a smashing success. The revamp saves SRC approximately 1.760 megawatts annually – more than the originally set target. As a result, the compressor’s energy consumption dropped by more than 14 percent, which equates to potential savings of approximately 150,000 euros per year. SRC is already considering equipping additional compressors with the HOERBIGER HydroCOM.

AWARD-WINNING ENERGY SAVER

SRC received a distinction in the renowned Energy Efficiency National Partners (EENP) Awards in the Best Practice category for this project. The awards recognize initiatives that effectively contribute to energy savings and CO₂ reductions, especially in traditionally energy-intensive industries such as refineries. “When it comes to energy efficiency, the key is that we all make our contribution,” said Dr. Amy Khor, Senior Minister of the State for the Environment and Water Resources, during the awards presentation at the National Energy Efficiency Conference on October 6, 2015. With HydroCOM, HOERBIGER already does its part.
CURRENT VEHICLES
FEATURING HOERBIGER DRIVE TECHNOLOGY

SEAT ATECA
SEAT has maintained the suspense for a long time now – and it’s finally unveiling its first SUV, the Ateca. And there is a lot more to this spirited Spaniard than meets the eye. With an exterior length of 4.36 meters (171.7 inches), the Ateca offers the best use of space in the segment, with a luggage compartment volume of 510 liters (18 cubic feet) in the standard configuration. Thanks to its intelligent lightweight design, it is also among the lightest vehicles in its segment. The svelte Spaniard combines reliability with a fresh, dynamic design and a solid feel. A comprehensive technology package, which offers not only a multitude of driver assistance systems, but also a wide variety of infotainment options, adds to Ateca’s appeal. Different drive profiles of the Ateca allow the car to be adapted to personal preferences as well as to the current driving situation and road conditions.

Powerful turbocharged engines boasting 115 to 190 hp deliver an agile driving experience, not just in urban traffic. Components made by HOERBIGER do their part: in the MQ200 manual 6-speed transmission, Blocker Rings featuring a sintered friction lining provide for a dynamic shifting feeling, as does a particularly powerful carbon friction lining in the DQ381 dual-clutch transmission. Incidentally, this is not the first time that SEAT has sought assistance from the well-honed HOERBIGER team: transmissions equipped with HOERBIGER Blocker Rings were already successfully applied in the Leon and the Exeo.

SEAT has unveiled its first SUV, the Ateca. HOERBIGER Blocker Rings, which have already been tried and tested in the Leon and the Exeo, ensure a dynamic driving experience.
VW MAGOTAN

Regardless of whether it is used as a company car or a family vehicle; the Passat produced by VW is one of the top-selling cars in the world. The Wolfsburg firm is now releasing the current Passat B8 also in China – as the new VW Magotan. An older sister model of the bestseller was sold under this name in the past in the Middle Kingdom. The car will be produced by the joint venture FAW-Volkswagen, but in contrast to the European variant only as a sedan. Like the Passat B8, the new Magotan is based on the Modular Transverse Matrix (MQB) – a concept that has been tried and tested in many of Volkswagen’s successful models and used previously in the Audi A3, the VW Tiguan, and the Seat Leon. This platform not only lends the sedan considerably more dynamic proportions, it also makes the back seats more spacious. The Chinese sister also uses the Passat as a benchmark in terms of technology: a whole host of new assistance, comfort, and infotainment systems provides not only increased safety, but also greater driving pleasure. The Magotan is available in three TSI engines, ranging from 150 to 220 hp. And in the dual-clutch transmission, sleeves made by HOERBIGER ensure rapid and smooth gearshifts and high driving comfort.
On June 23, 2016, after two years of construction, HOERBIGER held the opening ceremony for its new facility in Vienna. The 45-million-euro project established the company as the first industrial occupant of Vienna’s Urban Lakeside – one of the largest urban development projects currently underway in Europe. The optimized production operation at the new site provides even greater flexibility to address the multifaceted needs of HOERBIGER customers. In total, approximately 500 employees from three different locations in Vienna are now consolidated in one shared building.
The Hanns Hörbiger room installed on the roof of the new building is a symbol of HOERBIGER Group’s close bond with its heritage.

The campus-like architecture of the 24,000-square-meter complex was aligned with the corporate strategy down to the last detail.

The HOERBIGER Forum turns the HOERBIGER world into a unique virtual experience.

The new building represents an unbeatable symbiotic blend of our company’s research and innovation spirit, our state-of-the-art Vienna manufacturing plant, and our customer-oriented administration,” said Dr. Martin Komischke, President of the Board of Directors of HOERBIGER Holding AG, during the ceremony. “Here, our employees find an attractive work environment that is conducive to creativity, where they continue to develop our standard-setting products and services for our customers.”

**FUTURE-BOUND WITH VISION**

The architecture of the new HOERBIGER facility was aligned with the corporate strategy down to the last detail. Externally, this is apparent from the campus-like atmosphere of the 24,000-square-meter (260,000-square-foot) development, manufacturing, and administrative complex.

One of the highlights is the HOERBIGER Forum, which turns the HOERBIGER world into a unique virtual experience. Visitors gain an unprecedented view into how the company employs its performance-defining components and services to create added value for the customer.

The virtual brand world is also designed to appeal to highly qualified professionals and talent, and to help retain employees at the Vienna location after their apprenticeships and training phases.
The comet 67P/Churyumov-Gerasimenko, known as “Chury,” photographed from the Rosetta space probe. The photo was edited to improve clarity of the comet’s surface.
On September 30, 2016, European Space Agency’s (ESA) Rosetta space probe was retired. When the probe landed on the comet 67P/Churyumov-Gerasimenko, known as “Chury,” a one-of-a-kind mission came to an end: for the first time in space exploration history, it became possible to fly to a comet, follow it on its path around the Sun, and deploy a lander on its surface. The experiments that were conducted – in which HOERBIGER technology also played a role – supplied valuable data, and their evaluation will keep scientists busy for many years to come.

Rosetta set out on its journey on March 2, 2004, when it was launched from Europe’s Spaceport in French Guiana on board an Ariane 5 rocket. On its journey through space lasting more than twelve years, it covered some eight billion kilometers (five billion miles), endured enormous temperature fluctuations between plus 50 degrees Celsius (122 degrees Fahrenheit) and minus 180 degrees Celsius (-292 degrees Fahrenheit), and endured a two-and-a-half-year deep sleep – all without damage. Also on board the Rosetta probe was the Philae lander. Philae was provided by an international consortium led by the German Aerospace Center (DLR). The most important partner to the DLR during the construction of the lander module was the Max Planck Institute for Solar System Research (MPS) in Göttingen, Germany, which, among other things, manufactured the landing legs, the push-off mechanism, and the COSAC (Cometary Sampling and Composition) gas analyzer.

The COSAC system includes 28 HOERBIGER MegaMic silicon microvalves, which control the flows of gas in the COSAC. Each of them, including the housing, weighs less than 2 grams (0.07 ounces). “In addition to their miniature design, it is their lack of sensitivity to extreme temperatures and their
Organic compounds were detected in the comet’s dust. Researchers believe that the building blocks of life reached Earth by means of cometary impacts.

Start of a twelve-year trip through outer space: on March 2, 2004, Rosetta was launched on board an Ariane 5 rocket.

Dr. Jochen Schaible, Head of Platform Engineering, Research, and Development, HOERBIGER Automatisierungstechnik Holding GmbH. Schaible played a decisive role in the development of the valves at the time.

Dr. Fred Goesmann, Head of the COSAC Team at the Max Planck Institute for Solar System Research.

On its journey to the comet Chury, Rosetta performed a swing-by maneuver, passing Mars.

A LONG JOURNEY TO SUCCESS

Rosetta reached Chury in 2014. The trip took so long because Rosetta could not have caught up with the comet by taking the direct route. Rosetta thus performed several swing-by maneuvers, passing close to the Earth three times and passing Mars once, to gain velocity. Then in November 2014 the probe deployed Philae toward the comet. When the lander touched down on the comet’s surface, it kicked up some 0.4 cubic meters (14 cubic feet) of dust. This was a stroke of luck, because the dust was able to enter the inlet of the COSAC instrument on the underside of the lander and be “sniffed out.” “The dust it threw up is the most primordial cometary material that the Rosetta mission and all cometary missions before it have so far been able to collect,” explains Dr. Fred Goesmann, Head of MPS’ COSAC team.

A KIT FULL OF BIOCHEMISTRY

COSAC researchers have been able to detect a total of 16 organic compounds in the dust. They include alcohols, amines, and nitriles, which had already been discovered in the gas clouds of various comets – sometimes by means of terrestrial observations – as well as several newcomers. “All in all it is a veritable construction kit of organic compounds, many of which can serve as a precursor for important bio-
chemical reactions,” says Goesmann. Key molecules for the synthesis of sugars, amino acids, peptides, and nucleotides were found, for example. Researchers believe that such complex molecules, which are thought to be the building blocks of life, originally reached Earth by means of cometary impacts.

Ever since the active measuring phase was completed, Goesmann and his team have been busy reviewing and discerning not only their own results, but also those from the other instruments. There were three gas analyzers on the Rosetta mission: ROSINA on the orbiter, and COSAC and PTOLEMY on Philae. “We plan to create an entire conclusive history of the comet based on the commonalities and differences found in the data,” Goesmann adds.

TIME TO RETIRE
Following Philae’s landing, Rosetta continued to circle the comet. Now, two years later, Chury is moving away from the Sun again, beyond Jupiter’s orbit, giving Rosetta increasingly less solar energy. The probe was steered onto the cometary surface on September 30, 2016, in a final controlled maneuver. Rosetta and Philae have together hitched a ride through the solar system at speeds of up to 120,000 km/h (75,000 mph) – for eternity.
Effective July 1, 2016, Dr. Martin Komischke, CEO and Chairman of the Executive Board since 2004, assumed the position of President of the Board of Directors of HOERBIGER Holding AG. His successor as CEO and Chairman of the Executive Board of HOERBIGER Holding AG is Dr. Jürgen Zeschky, who joined the company on January 1, 2016, as a member of the HOERBIGER Executive Board.

**M O N I T O R I N G  S Y S T E M S:**
**S A L E S  P A R T N E R S H I P  W I T H  G E  B E N T L Y  N E V A D A**

GE and HOERBIGER have entered into a global sales partnership for reciprocating compressor monitoring systems.

HOERBIGER is now a value-added reseller for GE. Within the scope of the agreement, HOERBIGER will supplement its existing reciprocating compressor portfolio with GE’s Bently Nevada monitoring systems. This move will benefit end customers seeking to monitor or upgrade their existing compressor systems. Customers will gain access to GE’s proven and robust Bently Nevada monitoring solutions, while also being able to take advantage of HOERBIGER’s know-how in consulting, engineering, installation, project management, and diagnosis.

GE’s condition monitoring solutions combine advanced hardware, intelligent software, and trusted service and support – providing a broader, connected view of users’ operations. Together, they enable users to mitigate risk, boost safety, and reduce maintenance costs, all while improving equipment reliability, uptime, and efficiency.

HOERBIGER provides customized solutions to improve reliability, efficiency, and environmental soundness of reciprocating compressors and engines. A global network of service branches ensures short response times: regardless of whether customers are looking to repair, upgrade, or overhaul their compressor – a HOERBIGER specialist is always close by.


The change of the baton: Dr. Martin Komischke (left) and Dr. Jürgen Zeschky.
HOERBIGER AND STORM AGREE ON COOPERATION

Adding ignition and control systems made by HOERBIGER to its portfolio, August STORM GmbH & Co. KG is now able to offer engine services at a new level of performance. STORM and HOERBIGER signed a corresponding agreement on October 20, 2016.

HOERBIGER ignition systems ensure lower emissions and incur lower operating costs than those from the competition. HOERBIGER engine control units allow economical load capacity management in conjunction with efficient and reliable operation.

With production and development locations for engine solutions in Vienna, Austria, Åmål, Sweden, and Girard, Ohio, USA, HOERBIGER is considered a worldwide innovation and technology leader for ignition and control systems used for industrial gas and diesel engines.

STORM is now offering HOERBIGER ignition systems and engine control units for all common gas and diesel engines. This decision adds an important building block to STORM’s range of solutions for innovative engine upgrades in the 100 to 7,000 kilowatt range.

In June 2016, HOERBIGER and STORM entered into a service cooperation for selected major projects. The cooperation covers spare parts management, 24/7 field service, and workshop services to support customers in high equipment availability, engineering services, and equipment upgrade solutions for reciprocating compressors and engines.

Based in Spelle, Germany, August STORM GmbH & Co. KG offers premium maintenance and repair services for engines, drive systems, and compressors. STORM’s 13 locations offer services that support the maritime industry, railway operators, utility companies, and energy producers, as well as customers from the oil, gas, and chemicals industries. STORM has more than 300 employees and operates in over 15 countries.
CARBON TECHNOLOGY FOR THE HIGH-VOLUME SEGMENT

HOERBIGER presented its multi-cone ring featuring Direct Coating Carbon HC200 at the 2016 International Suppliers Fair in Wolfsburg, Germany. The friction ring is the latest innovation from the Drive Technology Strategic Business Unit. Unlike typical procedures in which the carbon linings are manufactured separately and then bonded to the blocker ring, this friction ring is produced using the direct coating method. The HC200 carbon friction lining is applied directly to the metal-formed support ring and cured together with the ring to produce the finished friction ring. The method offers high efficiency, lowers manufacturing costs, and makes carbon technology interesting for transmissions in the high-volume segment.

HOERBIGER CapaFlex™ SAVES ENERGY AND CUTS COSTS

CapaFlex™ is a mechanical capacity control unit for sustainable CO₂ refrigeration applications. HOERBIGER unveiled the innovation that offers great customer benefits at the 2016 Chillventa, an international trade show.

Refrigeration systems must be energy efficient, easy, and flexible to operate, and run reliably and without downtime. As a result of the high pressure present in refrigeration systems that use sustainable CO₂ as the refrigerant, it was previously not possible in these applications to use mechanical capacity control units that meet market requirements. With the CapaFlex™ system, HOERBIGER has now developed the first mechanical stepless capacity control unit that can also be used in transcritical CO₂ systems. The HOERBIGER CapaFlex™ system lowers the operator’s costs, both in terms of energy consumption and installation and maintenance. The new system also ensures failure-free operation of the refrigeration equipment: in the event of a malfunction, the compressor continues to operate at full power, keeping the cold chain intact at all times.

HOERBIGER unveiled an innovation offering great benefits for customers in the refrigeration technology field at the 2016 Chillventa, an international trade show.

The latest innovation of the HOERBIGER Drive Technology Strategic Business Unit: the HC200 carbon friction lining.
The new design of the HOERBIGER ePrAX® control electro-hydraulic actuator ensures faster commissioning of press brakes. At EuroBLECH 2016, HOERBIGER featured its innovative actuator, which boasts a compact design, versatility, and configuration options tailored to the customer’s requirements. The EuroBLECH trade show is Europe’s leading international sheet metal working technology exhibition.

Automation technology is primarily about precision, speed, and power – especially when working sheet metal. Key aspects include the simplicity of installation, maintenance, and operation of crucial machine elements. At the 2016 EuroBLECH, HOERBIGER showcased itself as a reliable partner for modular, efficient bending and press actuators.

The product family encompassing the ePrAX® basic, ePrAX® max, and ePrAX® control actuators has continually proven itself in the sheet metal working industry. At present, the compact electrohydraulic servoDrive and eDrive actuators are used in press brakes with bending forces of 110 and 170 tons. In contrast to all-electric actuators, the advanced HOERBIGER ePrAX® control is powerful and durable, thanks to hydraulics. The compact design features no external oil hoses, ensuring clean and leak-free operation, and it allows precise and customized adjustments to the press brake stroke and cycle time. Use of the servoDrive boosts productivity and energy efficiency. Another central advantage of the latest generation of servoDrive actuators is the ease of handling during installation and maintenance.

With the actuators demonstrated at the EuroBLECH, HOERBIGER has once again set standards for the intelligent use of fluidics solutions for mechanical engineering. As a result of the conceptual approach to combine the advantages of electrical and hydraulic systems in a design that overcomes the drawbacks of the individual drive concepts, HOERBIGER has achieved a perfect symbiotic blend offering maximum benefit for the customer.
HOERBIGER Antriebstechnik GmbH is increasing its production and infrastructure areas in Schongau, Germany, by approximately 30 percent. The existing stamping facility will be expanded by some 870 square meters (9,300 square feet). At the same time, an additional production hall measuring 1,300 square meters (14,000 square feet) will be built on the adjoining undeveloped area. Construction started in the fall of 2016. The first machines for the production of synchronizer rings and related tool maintenance are expected to move into the new stamping facility as early as the fall of 2017. HOERBIGER is planning investments in the double-digit million euro range at the Schongau site in the coming three years. By expanding its capacity, HOERBIGER is responding to rising order volumes from existing as well as new customers in the automotive industry.
HOERBIGER eVCP SYSTEM MARKET LAUNCH

Equipped with the HOERBIGER eVCP system (electrical Variable Clearance Pocket), reciprocating compressors provide the maximum possible delivery volume under fluctuating pressure – simply and automatically. At the start of October, the system was first introduced to a wide industrial audience at the Gas Machinery Conference in Denver, Colorado.

Clearance volume control is part of standard equipment for high-speed compressors in natural gas applications. Stepless capacity control of the clearance pocket allows the HOERBIGER eVCP system to vary the delivery volume, adapting it precisely to the available torque of the drive – while the compressor continues to run at optimal capacity. Compared to conventional stepped systems, this yields a higher production capacity. Control is fully automatic, based on programmed operating limits or via interfaces to a distributed control system. No on-site staff is needed to manually vary the clearance volume – a particular advantage for remote compressor stations.

The design of the HOERBIGER eVCP system is entirely electric. All components are standardized and require minimal maintenance effort at the site. In contrast to hydraulic solutions, a self-locking system requires no energy during a standstill. In the event of a power failure, the HOERBIGER eVCP valve functions in the same manner as conventional clearance volume control with a hand wheel.

10TH EFRC CONFERENCE

At the European Forum for Reciprocating Compressors (EFRC) held in mid-September in Düsseldorf, Germany, HOERBIGER unveiled a new generation of the XP valve as well as the newly developed and unique XperLUBE lubricating system. Via a simulation model, visitors to the HOERBIGER booth were able to see the benefits of the HOERBIGER XperLUBE system for themselves. The system is used to meter lubricant in reciprocating compressors with pinpoint precision using electronic control. An automatic self-diagnostic function allows the system to detect potential errors and intervene within fractions of a second. If one injector should become clogged, the others take over the work, and the compressor is able to keep running. Under the title “Next-generation compressor valve technology,” HOERBIGER used several case studies to demonstrate the added value of the XP valve featuring the PowerPEEK™ valve plate. One OEM customer was able to increase compressor operating time 20-fold, thanks to the XP valve. As a result of the special design of the XP valve, the compressor of another HOERBIGER OEM customer required only four cylinders instead of six for the same capacity, saving its end customer a good deal of money. This excellent performance was ultimately the reason behind the OEM customer winning the contract from its end customer.
The first repair shop for compressor service was established in Walsrode, Germany. Shortly thereafter, a second service location was opened in Bad Dürkheim, Germany. The new offices put HOERBIGER in very close proximity to its customers: the Walsrode location serviced the market in Northern Germany and Denmark, while Bad Dürkheim was the contact for the Southern German region and later also for Switzerland. After the building in Bad Dürkheim experienced space constraints after only four years, a suitable facility was found in Maxdorf. The two German locations were expanded several times over the years.

HOERBIGER was bestowed a particular honor in the 1990s when a street in the Walsrode industrial park as well as the street in front of the operation in Maxdorf were named after company founder Hanns Hörbiger. In 2014, the decision was made to relocate the Walsrode site to Seevetal, which is near Hamburg. The history of HOERBIGER Service GmbH in Germany is impressive proof that HOERBIGER was able to successfully establish itself as a service provider in one of Europe’s most important markets.
1 Ralf Baumgarten (56) lives and works in Cologne. Over the years, the designer made a name for himself as a photographer. His works have won multiple awards. His book “Uhr-Menschen,” for example, received the prestigious Red Dot Design Award in 2005; and in 2010 the book “Twelve Faces of Time – Horological Virtuosos” garnered the iF Design Award. His clients include international magazines, publishers, and companies.

2 Marcel Billaudet (44) is based in Wiener Neustadt, Austria, and works as a photographer for national and international clients. He spent many years in the movie business, an experience that has a strong influence on his way of storytelling, directing, and lighting. His main focus is on people photography – from portraiture to reportage. Besides that, he also enjoys shooting architecture and stills.

3 Terence Chuah (48) is the Head of Marketing Communication at HOERBIGER in Singapore and leader of the region’s APAC MarCom team. He has an MBA in International Marketing from Oklahoma City University. Chuah holds more than 20 years of regional market- and communication experience with established and publicly listed companies in Singapore.

4 Jens Geisel (53) works in Corporate Communications at HOERBIGER Holding AG. He takes care of the company’s digital media, including the HOERBIGER web site and the online communication platform HOERBIGER Community. In addition, he continuously applies his extensive journalistic experience as an author of articles in HOERBIGER@Motion, the HOERBIGER customer magazine.

5 Peter D. Hartung (60) has been a self-employed photographer for 25 years. He lives and works in Fellbach near Stuttgart, Germany. After making a lateral move into the profession, he primarily works in corporate photography – from portraiture to reportage. Besides that, he also enjoys shooting landscapes, culture, wine, and dining. As a reliable partner to his long-standing customers, he primarily works in southern Germany as well as in Switzerland, Austria, and France.

6 Catrin Jansen-Steffe (46) worked for four years as an Executive Assistant in a metalworking group of companies after earning her master’s degree. In the three years thereafter, she was in charge of national and international PR and marketing for IT specialist firm Lampertz (Rittal International). In 2005, she founded Jansen Communications, a PR and marketing consulting firm geared toward IT, IT security, and industry.

7 Simon Schmid (33) is in charge of Corporate Publishing at HOERBIGER and manages the production of the HOERBIGER@Motion customer magazine and HOERBIGER@MotionInside employee magazine. Previously, he handled the Group’s digital media, starting in 2012. Simon Schmid started his professional career as an author for the automotive industry. He studied social sciences and economics in Tübingen.

8 Ludwig Schönfeld (52) is the Head of Corporate Communications of HOERBIGER Holding AG. Today, only a small portion of his responsibilities are still related to his roots, daily journalism. Nonetheless, the style of reports and features he writes for HOERBIGER@Motion on a regular basis still demonstrates his interest in journalism, which in these texts primarily lies in the success factors of HOERBIGER’s customers.

9 Peter Weidenhammer (61) became self-employed 32 years ago and is specialized in technical topics and technology. The professional daily newspaper journalist was previously employed by leading magazines, most recently as editor-in-chief. He has since worked as a PR consultant and author for premium automobile manufacturers. In addition, he has authored articles for all major German automobile magazines and renowned technical publications.

10 Kathrin Wildemann (32) felt drawn to corporate communications after her studies in chemistry and various internships in journalism. After internships for an international conglomerate, she held several positions in public relations. As of 2016, she is editor for the agency DIE WORTWERKSTATT near Tübingen, where she composes articles for a number of leading German automotive suppliers.

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