BALANCING ACT IN THE SPRAY TOWER
Experts collaborate on explosion protection at the Meggle dairy company

PERFORMANCE IN ACTION
HOERBIGER lowers energy costs at a refinery in Italy

HEAVY LIFTER
With xetto®, loading small commercial vans is easy and effortless
“TIME AND AGAIN, HOERBIGER PRODUCTS AND SERVICES DELIVER SURPRISING NEW AND UNIQUE APPROACHES TO PREVIOUSLY UNSOLVED TASKS.”
already saved the company some 1 million euros in energy costs in the first year alone after installation.

Machine manufacturer VICLA in Albavilla, Italy, has ambitious goals. The manufacturer of press brakes and guillotine shears sees additional potential for growth in its press brake market. Performance-defining components made by HOERBIGER play a crucial role in the company’s efforts, notably the HOERBIGER ePrAX® actuator.

Time and again, HOERBIGER products and services deliver surprising new and unique approaches to previously unsolved tasks. The unique features of our innovations set new standards. The loading aid xetto®, a worldwide innovation made by HOERBIGER, is one such new product. We show you in detail in this issue of our customer magazine how xetto® functions as well as the advantages of the system. You will be impressed!

Ladies and Gentlemen,

After more than 23 years of operational responsibility, I will step down as Chairman of the Executive Board of HOERBIGER Holding AG effective July 1, 2016, and assume a new role for our Group as President of the Board of Directors. I would like to thank you, our business partners and customers, for the confidence that you place time and again in the development and consulting services of our employees as well as in our products and services. During all my years in operations, I always took a special interest in the exchange and partnership with our customers. In my future capacity as President of the Board of Directors, I will be fully committed to ensuring that the HOERBIGER brand continues to symbolize not only innovation and performance, but additionally and more importantly proximity to the market and our customers.

Dr. Martin Komischke
CEO and Chairman of the Executive Board
HOERBIGER Holding AG
In early January 2016, HOERBIGER acquired privately owned Newson Gale based in Nottingham, United Kingdom. BRILEX – Specialists for passive explosion protection is a leading provider of passive explosion protection products and offers more than 20 years of industry experience. As of April 1, 2016, the company has been part of the HOERBIGER Group.

HOERBIGER is bringing an easy-to-use transport and loading system to the market. VICLA in Albavilla, Italy, considers itself an artisanal enterprise that provides its clients with custom-designed sheet-metal-working machinery in addition to standard production equipment.

Spray dryers are complex systems, and protecting them against dust explosions requires extensive know-how. Dairy firm Meggle is relying on the expertise of IEP Technologies to protect its newest installation. IEP Technologies, which became part of HOERBIGER in 2015, already proved its value by equipping the first system at Meggle’s location in Wasserburg am Inn, Germany, with explosion protection.
BALANCING ACT IN THE SPRAY TOWER

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Text: Sabine Mühlenkamp  Photography: Siegfried Sperl
In addition to the active ingredient, pharmaceutical tablets additionally always contain excipients, which have no pharmacological effect. Lactose is used quite frequently as a filler and binding agent. Dairy firm Meggle is one of the world’s leading manufacturers of pharmaceutical lactose.

Most consumers associate herb butter and other types of butter with Meggle’s trademark – the blue clover leaf. “Our herb butter is arguably our best-known product, yet the pharmaceutical excipients field is also one of our core businesses and plays a decisive role in the company as a whole,” comments Albert Speckmaier, Head of Production for Functional Products at Meggle. Both butter products and lactose originate from milk. Meggle made a name for itself almost 130 years ago, initially with cheese, before it increasingly shifted its focus toward butter. Pharmaceutical lactose has meanwhile also evolved into a product with a 60-year-long tradition. At the time, the company was searching for a way to utilize the byproduct whey.

Dairy firm Meggle is one of the world’s leading manufacturers of pharmaceutical lactose.

Pharmaceutical companies are not only discerning when it comes to the shape, surface, and size of the pills they manufacture, but also demand other functional properties, such as special hardness degrees, a particular disintegration rate, or sustained release of active substances. “We produce some 25 different lactose-based excipients,” explains Speckmaier. Ultimately, these products cover all solid forms of administration – from tablets, capsules, and sachets to powder formulations. “At the same time, lactose is an important delivery agent for the active substance to the lungs, for example when using powder inhalers,” Speckmaier adds. The deeper the active substance has to be transported into the lungs, the finer the lactose particles. The proper formulation is crucial, and Meggle is considered a specialist in this field.

DRAWN-OUT PROCESS

The consumer has no idea of considerations regarding hardness and disintegration properties when swallowing a tablet. And presumably the consumer is even less suspecting of the fact that producing this excipient is a markedly protracted process. Whey, which initially is still present in liquid form, passes through various process stages in as many as three days before the resulting lactose powder is ready for packaging.

Some of the lactose produced by Meggle is processed further in spray towers to obtain lactose that can be directly made into tablets. Many of these steps consume vast amounts of energy, which is supplied by a dedicated modern combined heat and power plant boasting an efficiency of more than 90 percent. The steam generated there is used to heat the spray towers and evaporators, for example. Producing lactose powder poses a challenge not only from an energy perspective, but also in other respects. Cost pressure has risen significantly in the health-care sector in recent years. “To be successful economically, these products can only be manufactured on an industrial scale,” Speckmaier points out.

ANOTHER SPRAY TOWER PUT INTO OPERATION

Spray dryers meet this requirement – the machines are extremely efficient to operate, though they necessitate special know-how. One advantage of the process is that it is rapid yet very gentle on the end product. Additionally, it allows a defined particle size distribution in the micro range to be achieved, a crucial factor for the quality of the product.

During production, the whey, after having been treated in several stages, is injected via spray nozzles from above as a fine mist into the extremely hot air of the dryer. This enormously increases the overall surface area of the liquid, convectively drying it. The drops are dried and the lactose powder is separated from the air in the bottom area of the tower.
“We now have extensive experience with this technology, since we have several spray towers on site,” Speckmaier explains. The first spray tower with Ex suppression, as it is also referred to, was put into operation ten years ago. Last year, the construction of another spray tower was started. The tower provides approximately one quarter more capacity and is about to be commissioned. The system is made primarily of stainless steel.

INDISPENSABLE PROTECTION

Only grayish-silver stainless steel? Not quite. Twenty-four signal red cylinders are installed at equal intervals around the entire tower – the tower’s life insurance, so to say. After all, while process engineering is important, explosion protection requires particular attention.

At first glance, it would seem perplexing that lactose powder could trigger an explosion. Nonetheless, a spray dryer offers conditions that favor explosions. “We have organic, extremely fine powder in a large volume of air and high temperatures. All that is missing for an explosion to occur is the third component for explosive conditions – the spark,” Speckmaier comments. By virtue of the high temperatures, there is a constant risk that powder deposits may spontaneously ignite.

Speckmaier knows how to handle this hazard, though. “Our engineering team worked closely with specialty firms in the construction of the tower. Spray towers are some of the most challenging installations in terms of explosion protection,” Speckmaier confirms. “This requires expert know-how.”

The selection of firms specializing in explosion protection was not particularly large when the first spray tower was built. IEP Technologies was chosen for the job – at that time the company was still operating under the name of Kidde. The explosion protection concepts made by IEP Technologies, which became part of HOERBIGER in 2015, can be found in approximately 80 percent of all current spray dryers. The reason is that only few companies have ATEX certification for very large cylinders.

ALL-AROUND PROTECTION

As part of the hazard assessment, initially existing risks for areas prone to explosion based on possible ignition hazards were evaluated, and technical and organizational protective measures were initiated. Other explosion protection concepts, such as venting by way of rupture disks, were not an option due to the close proximity to residential areas, making open spaces for venting in the vicinity of the premises scarce.

Meggle decided in favor of all-around protection of the tower using IEP Technologies’ explosion suppression. The system consists of the aforementioned typical red suppressant storage cylinders, which are installed at various levels around the
“SPRAY TOWERS ARE SOME OF THE MOST CHALLENGING INSTALLATIONS IN TERMS OF EXPLOSION PROTECTION. THIS REQUIRES EXPERT KNOW-HOW.”

Albert Speckmaier, Head of Production for Functional Products at Meggle
EXPLOSION PROTECTION IS A BALANCING ACT. WHILE SAFETY IS THE TOP PRIORITY, FAULTY ACTIVATIONS ARE ALSO UNDESIRABLE.
spray dryer as well as on other power units. The pressure sensors are configured to respond to the rise in pressure typical of an explosion. If an explosion looms, the sensors detect this increase within milliseconds and respond in a fraction of a second by extinguishing the explosion. The sodium bicarbonate (baking soda) that is introduced has a concentration of 700 to 1500 g/m³ and reduces the pressure effects of the explosion to 200 mbar or less, which otherwise could rise to 8 or 9 bar. The entire tower is designed for a pressure of 400 mbar to prevent it from being damaged. In principle, these systems operate self-sufficiently. However, they are connected to a control system to allow the machines to be shut down immediately if triggering should occur.

**EXPLOSION PROTECTION IS TEAM WORK**

Even a milk production plant requires inspections in accordance with the Ordinance on Hazardous Substances and is scrutinized and signed off in advance by professional associations and authorities. “The last acceptance inspection is generally not a problem, since the engineering team works very closely beforehand with the specialty firms and authorities,” Speckmaier explains. As a result, the tried-and-tested concept of the first spray tower was also used for the new spray tower. “We feel that it would not have made sense to bring another vendor on board – due to the more complex replacement parts inventory alone. Since the suppressors are also used in other parts of the plant, including in the food systems and on large dryers, we always keep replacement cylinders on hand,” says Speckmaier.

Several improvements have been made to the suppressant cylinders over the course of the past ten years, which primarily affect maintenance and servicing. Thanks to an inspection opening, the nozzle system is now easy to check by sliding in an inspection camera. Previously, this necessitated removal of the heavy extinguishing powder cylinders. Replacing the vessels has also become much simpler, thanks to the use of a bayonet catch in place of the former rigid wiring. While in the past three hours were estimated for maintenance, the annual inspection today is completed within fifteen minutes given the ease of accessibility.

Explosion protection is a balancing act. While safety is the top priority, faulty activations are also undesirable. This would require discarding the batch, halting production, and cleaning and restarting the spray dryer. “The anticipated costs associated with the related downtime would be significant,” Speckmaier adds.

It takes a while until production is back up and running, even when an explosion is quenched at the source. While the suppressant systems are replaced relatively quickly, it takes at least two weeks until authorities and the insurance company release the plant again.

Fortunately, such a situation has never occurred. “Still, this cannot even be compared to the damage that an explosion could cause without protection of the system. In addition to the potential hazards to people and the environment, damage to the equipment and losses from a production shutdown would be very high,” Speckmaier says.

This is why Meggle will continue to rely on IEP Technologies’ explosion protection concepts in future projects.
In early January 2016, HOERBIGER acquired privately owned Newson Gale based in Nottingham, United Kingdom. With the acquisition of Newson Gale, HOERBIGER Safety Solutions has further strengthened its leading position in plant safety and explosion mitigation.

Text: Charles Butcher  Photography: Chris Pipes, AZP Worldwide/Fotolia.com

The movement of liquids and powders can result in the accumulation of static electricity on equipment, which can cause high-energy electrostatic sparks to be discharged in flammable and combustible atmospheres. Processes like crude oil transloading require static grounding protection to prevent ignition of flammable vapours.
Newson Gale offers its customers a comprehensive portfolio of solutions dedicated to eliminating uncontrolled discharges of static electricity and preventing ignition hazards in flammable and potentially explosive areas. The company enjoys an outstanding market position in electrostatic grounding for hazardous areas. It has over 30 years of experience in preventive explosion protection, offering its customers a comprehensive portfolio of solutions aimed at the prevention of electrostatic ignition hazards in areas prone to explosions – basically any process that involves flammable gases, liquid, vapors, or dust. Ranging from loading tank trucks to filling small containers, Newson Gale has solutions for virtually every process capable of generating static electricity.

“Safety and explosion prevention technology are attractive growth markets, which ideally complement HOERBIGER’s core business and thus hold attractive development potential,” says Dr. Martin Komischke, CEO and Chairman of the Executive Board of HOERBIGER Holding AG. “With Newson Gale’s reputation and know-how, we strengthen our leading role as a developer and global provider of performance-defining safety-related components and services.”

“Static control is simple in principle, but it can be complex in practice with many rules and codes of practice for different industries and geographical areas,” says Michael O’Brien, Head of Marketing and Product Management for Newson Gale. “We are an expert source where people can come for unbiased advice.”

A simple piece of wire can eliminate static as long as one end connects to the right point on a pipe or process vessel, and the other to the ground. The hard part, O’Brien explains, is ensuring reliability. A layer of paint or rust, a faulty ground connection, or forgetting to clamp the cable to a drum being filled can all allow static to build up.

The Newson Gale product range includes grounding clamps with green lights to show that the electrical resistance between the process vessel and ground is below a safe limit.
More advanced devices shut down the process if grounding fails. The top models even check that the clamp is attached to its intended destination – such as a road tanker – rather than parked on a convenient handrail.

Previously, in September 2015, HOERBIGER had acquired IEP Technologies, LLC of Marlborough, Massachusetts, USA. IEP Technologies is one of the world’s leading providers of sophisticated safety and explosion protection technology for a broad range of industrial plant engineering applications. The acquisition of IEP Technologies created the basis for developing additional products and services with the shared goal of protecting people and successfully preventing serious damage caused by explosions in an industrial environment.

“We were looking for a partner who had the goal to carry on the success of Newson Gale,” says Graham Tyers, CEO of Newson Gale. “HOERBIGER is a buyer that not only operates in the industrial safety field, but additionally has access to the global market and offers a stable financial foundation. HOERBIGER’s plans to establish a powerful safety segment is an outstanding fit for the expectations that our stakeholders have in the future of Newson Gale.”

Apart from their commitment to safety, Newson Gale and HOERBIGER have much in common in regard to innovation and customer service. “Company founder Ernest Kochmann and managing director Graham Tyers have built a business that uses technology to solve customers’ problems,” says O’Brien. “Our development and sales are driven by customer needs,” he continues.
BRILEX — SPECIALISTS FOR PASSIVE EXPLOSION PROTECTION
BRILEX explosion vents are specially designed to control dust explosions. By providing early relief of an incipient explosion, BRILEX explosion vents reliably protect people and industrial sites worldwide, such as this particle board plant.

Effective April 1, 2016, BRILEX GmbH headquartered in Brilon, Germany, became part of the HOERBIGER Group. The company is a leading provider of passive explosion protection products and offers more than 20 years of industry experience.

Explosion venting products manufactured by BRILEX mitigate the devastating effects of combustible dust or vapor explosions, protecting personnel, high-value assets, and processing facilities.

BRILEX’s portfolio includes patented, in-house-developed, ATEX-certified explosion vents and flameless vents, which complement the range of HOERBIGER explosion relief valves. BRILEX has a state-of-the-art manufacturing operation with an experienced direct sales organization and a broad network of distributors. The reputation and knowledge of BRILEX will enable HOERBIGER to further expand existing competencies in its industrial core business and tap valuable synergies, especially in the passive explosion protection field. The acquisition of BRILEX will strengthen HOERBIGER’s leading role as a developer, manufacturer, and global provider of performance-defining and increasingly safety-focused components and services for the oil, gas, and process industries.

BRILEX’s range of products complements the portfolio of HOERBIGER’s new Safety Solutions Segment. HOERBIGER has been an innovation and technology leader for decades in the passive protection market with explosion relief and check valves. HOERBIGER offers BRILEX a global operations network, providing proximity to the customer at the worldwide locations of the oil, gas, and process industries.

“Safety and explosion protection technology continues to hold attractive development potential. Together, HOERBIGER and BRILEX have excellent global growth opportunities,” said Dr. Martin Komischke, CEO and Chairman of the Executive Board of HOERBIGER Holding AG. “Our goal is to position HOERBIGER even more strongly as a safety technology solution provider in the industry with performance-defining safety solutions.”

“I was looking for a buyer that would ensure the continued development of BRILEX and provide the employees with long-term prospects,” commented Martin Bunse, founder of BRILEX. “What convinced me was the option offered by HOERBIGER of expediting BRILEX’s growth more quickly and effectively in order to take full advantage of the opportunities presented by the rapidly growing market. Under the umbrella of the HOERBIGER brand, we will have exceptional opportunities to advance our successful growth strategy.”

The explosion venting products manufactured by BRILEX protect high-value assets and processing facilities.

Top and middle: Installations with pneumatic cleaning systems and a very high vacuum operation require an explosion vent that withstands vacuum and positive pressure cycling for extended periods of time. For such requirements, the BRILEX GE is the best choice.

Bottom: If the negative pressure is not greater than 60 percent of the rated rupture pressure, the KE explosion vent is a great alternative.
Italian oil and energy group Eni shows how – even in difficult times – it is possible to systematically implement improvements to protect margins. A significant enhancement was efficiency increases in the ongoing operation of twin reciprocating compressors. The crucial contribution came from the HOERBIGER service organization.

Text: Marcus Geigle    Photography: Marcel Billaudet
It’s mid-December, the sun is still pleasantly warm, and the thermometer shows 16 degrees Celsius on the boardwalk of Taranto, a natural port in Southern Italy on the Ionian Sea. An idyllic Mediterranean landscape. Even early in the morning, the city is already bustling with energy. Young couples on Vespas weave their way through commuter traffic, horns honking, while old men at the fountain watch life as the day starts and accent their debates with lively gesticulations.

A look inland reveals two large industrial complexes that dominate the horizon: a huge steel mill and the Eni Refinery Taranto, the most strategic refinery in Southern Europe.

The refinery, established in 1967, has a processing capacity of 6.5 million tons of crude oil. A new hydrocracking plant was built in 2009, one of the most modern in the world. With its 500 employees, the refinery has incrementally evolved to become one of the world’s most efficient. A key motto of Eni is that there is always room for improvement. That means that the employees do not rest on their laurels, but always search for more efficiency, reliability, and environmental compatibility. A result of their endeavors is Eni Slurry Technology EST, a method within the existing cracking process that was newly developed in-house by Eni’s Research & Development department. EST allows even inferior crude grades to be refined down to the last drop with little impact on the environment. In contrast, with conventional methods as much as 10 percent of the commodity cannot be processed.

When it comes to improving its plants, Eni Taranto doesn’t just rely on in-house developments; the company’s specialists are also always open to inspiration and support from the outside. Technical Services Manager Raffaele Ciminera, who joined Eni 12 years ago at the age of 25, sums it up: “We can only maintain our leading market position if we continually improve our processes with the help of new ideas from external partners. It is my goal, and that of my 70 employees in Engineering and Maintenance, to not only retain our edge over the competition, but to continuously expand it.”

To achieve this goal, the Technical Services Manager relies on HOERBIGER’s knowledge and extensive technological expertise. In fact, it was support from HOERBIGER’s first-rate service team that even made it possible to realize improvement potential in the reciprocating compressors. Efficiency is crucial in the energy-intensive refinery processes of hydrocracking technology used to compress hydrogen to have light hydrocarbons and remove sulfur from crude oil. A conventional bypass design regularly results in lost energy of the previously compressed gas, which is recirculated unused to the compression process. The reason behind this is the variable demand for compressed gas. The process does not require 100 percent on an ongoing basis, but perhaps only 75 percent. Without stepless capac-
ity control, the excess energy spent on compression of the total volume is lost, and along with it cold hard cash.

What Eni needed was an innovative technological solution to employ energy more efficiently. This is where the principle of stepless capacity control comes in, which renders a bypass superfluous. With the electrohydraulic HydroCOM system, HOERBIGER developed a technology that sets standards and allows flexible and stepless control of the gas volume in the compression process. Energy costs of this central processing step are thereby reduced by up to 55 percent.

**ONE MILLION EUROS SAVED IN THE FIRST YEAR**

In 2013, the first year with the HydroCOM system in place on two reciprocating compressors, Eni Taranto achieved savings to the tune of 1 million euros in energy costs, followed by additional savings in the years since. Subsequently, the technology was installed on additional machines in the refinery’s compressor fleet. And there is more: the reliable, powerful, and extremely efficient solution of the capacity control system is considered a best-practice example for efficiency increases throughout Eni, and it is scheduled to be rolled out in additional plants of the well-established Italian firm.

“Outsiders often believe that energy costs do not play a big role for a refinery since there is an abundance of energy. Far from it – energy costs are a significant factor in our entire production process,” Ciminera clarifies. “Reducing energy consumption offers the most effective lever to become increasingly better in regard to both our efficiency targets and our efforts for improved environmental compatibility,” he emphasizes.

These targets are related above all to the EU's increasingly stringent environmental guidelines and latest emissions targets for 2016 and thereafter. Active emissions trading (cap and trade) provides an additional economic and ecological aspect – the more CO₂ that is produced, the more money that must be spent on emissions certificates.

If a company manages to cut its use of energy in existing processes, not only are energy costs reduced, but also CO₂ emissions. The company can then sell emissions certificates in the market, instead of having to buy these certificates itself. In the long run, this scheme provides a possibility to create an additional revenue source. And in the short and medium term, it provides clear cost savings to a refinery. Ciminera comments: “For my team, CO₂ emissions have become an important indicator of Eni’s corporate success.”

The company’s desire to attain a leading position when it comes to the CO₂ footprint underscores how serious Eni’s management is about environmental sustainability and efficiency. Eni Taranto created a project that scrutinized all energy consumers and began to develop and implement alternatives...
following the analysis. This project was also intended to change the employees’ mindset and hone their awareness of energy efficiency. Eni consumed 1 megawatt of electricity solely for lighting in the plant. The switch from fluorescent tubes to LED lights has cut the company’s expenditures in this area in half.

As part of the energy efficiency project, the installation team equipped two selected compressors with a total of 16 new actuators, and at the same time made an upgrade to the latest generation of CE valves to boost reliability.

“We are accustomed to going the extra mile for our customers – and we expect our service partners to do the same. Still, we were impressed by how the team of HOERBIGER Italy approached the task of planning and implementing the efficiency improvement project for our compressors. It even went as far as Project Leader Matteo Cussolotto setting up camp for one week in our refinery and retrofitting the plants together with my people and the installation team of a third-party firm – even on the weekend.”

HOERBIGER ENSURES OPTIMAL INSTALLATION OF THE HYDROCOM SYSTEM

Stepless capacity control was entirely new to the Engineering and Maintenance team of Eni Taranto. Therefore, HOERBIGER offered on-site training for the engineers who would install and operate the selected compressors. It turned out that they were quick to understand the technical requirements and necessary adjustments. However, the Eni technicians did

1 Raffaele Ciminera stresses the importance of focusing on continuous improvement for a high power density in the entire refinery.

2 Efficiency, reliability, and environmental compatibility are the core factors for success at the Eni refinery in Taranto.

3 Service depends on constant dialogue – as here on site at the compressor.
require some guidance to achieve optimal results, especially for the fine-tuning of the HOERBIGER HydroCOM system. Additional training was required for the third-party firm scheduled to carry out the installation. It turned out that transferring the knowledge and operating experience of more than 1,200 HydroCOM systems would take some time. The maintenance crew of a refinery is able to operate an optimally configured capacity control unit without difficulty and easily readjust it based on continuously measured and evaluated operating data. During the installation phase, however, the knowledge of the HOERBIGER service engineers must be available on-site to achieve optimized performance and efficiency increases. The ease of handling the HydroCOM and experience gained from the installation on the first compressor cut the installation and fine-tuning time for the actuators on the second compressor in half. Ciminera comments: “I know the capabilities of my engineering team and how quickly they pick up anything new. This was confirmed in the HydroCOM installation on the second compressor. The system is designed to allow intuitive operation and, in terms of fine adjustment, to considerably reduce the commissioning time as a result of the learning curve. This is what I would expect of such a key component of our plant.”

The principle of performance-defining components and service for compressors that have been in operation for decades is a perfect fit for Eni Taranto’s continuous improvement process, as the example of the advanced stepless capacity control system impressively demonstrates. In 2011, management of the refinery initiated a program that would boost the performance of the entire plant, known as Eni Performance
Refining capacity at Eni

Eni has a total of 34,000 employees. Eni Taranto is one of five refineries in Italy wholly owned by Eni. In 2014, the company’s European refining capacity was 1,323 kilo barrels per day (kbbl/d). The capacity of Eni Taranto is approximately 120,000 barrels per day (bbl/d).

Optimization of Refinery (POR). At that time, the high oil price of more than 110 dollars per barrel prompted implementation of an efficiency program to secure margins in Eni’s downstream segment. “We had to face a different kind of crisis in our industry, if you will. The high price of oil put significant downward pressure on our margins. But again we saw the opportunity to strengthen our competitive position in difficult times through improvement projects,” Ciminera explains.

PROCESS KNOWLEDGE FACILITATES IMPROVEMENTS

The Engineering and Maintenance team members played a central role as part of POR. They had to develop suggestions on how the cracking processes could be designed to be even more efficient. Ciminera and his team of engineers quickly arrived at the heart of the hydrocracking plant, the compressors. The compressor fleet encompasses machines of various models and years of manufacture: from the 1960s to 2005. Since HOERBIGER has experience in all common compressor manufacturer models, the technological understanding of the selected compressors was not an issue. On the contrary: HOERBIGER’s existing comprehensive process knowledge of a refinery environment ensured from the very start that it was possible to develop improvements with the interests of the customer in mind.

The clearly articulated goal of achieving energy cost savings of 1 million euros in the first year of installation was ambitious and defined a clear metric. Within Eni’s POR initiative, the HydroCOM stepless capacity control system contributes directly to an increase in efficiency and a protection of margins in Eni’s downstream segment, despite the crisis in the oil and gas industry. What’s more, the project serves as a best-practice example at Eni. The experience gained during this first installation will not only be used to optimize the energy consumption of additional compressors at Eni Taranto using HydroCOM, but it will also serve as an exemplary project and be expanded to other Eni plants in Italy. Improvement potential has been recognized for 24 additional compressors.

Raffaele Ciminera summarizes: “The technological understanding and outstanding service of HOERBIGER are helping us make great strides in the Taranto plant to achieve our ambitious efficiency and emissions goals. But it’s not just that – they also support our competitive position in the long run and help protect our margins even in times of crises. This benefits everyone involved and results in additional appreciation of the work that my young and ambitious Engineering and Maintenance team puts in at Eni.”
VICLA in Albavilla, Italy

PRESS BRAKES MADE TO ORDER
A visitor to the VICLA production facility in Albavilla, Italy, will immediately sense the special environment: VICLA does not consider itself a conventional manufacturer of press brakes and guillotine shears, but rather an artisanal enterprise that provides its clients with custom-designed sheet-metal-working machinery in addition to standard production equipment. These are not off-the-shelf products, but rather made-to-order press brakes and guillotine shears.

Text: Jens Geisel   Photography: Peter Hartung
In addition to individuality and flexibility, VICLA strives for uncompromising quality. One of the company’s main strengths lies in paying close attention to customer requirements and using them as a basis for its own research and development, as well as including high-quality components in the design and construction of its machinery.

When it comes to components, VICLA purchases all the individual parts for press brakes – ranging from extremely heavy frames and drives through to electronics. The core competencies of VICLA lie in design and production know-how. The result is leading-edge machines well-known for their high-level performance characteristics.

“We have extremely high quality demands,” explains Marcello Ballacchino, President and Co-Founder of VICLA. Therefore, VICLA’s suppliers include such well-known names as ABB, Voith, and Schneider Electric. “Since our founding in 2008, we have very successfully worked with HOERBIGER,” Ballacchino declares. In his opinion, the two companies are a good fit, due to their similar business philosophies. Working with leading corporations is strategically important and vital to VICLA’s success, since these companies must be able to supply high-quality materials and components. Likewise, Ballacchino states that flexibility and rapid delivery times are important selection criteria.

For him, a strategy based solely on price considerations is unimaginable. Corrado Nucci, Executive Director and Co-Founder of the company, also supports this concept. Ballacchino and Nucci founded VICLA after gaining years of experience in the mechanical engineering business. Highly trained and motivated employees in Albavilla are an important element in the company’s success. Since its founding, a network of sales representatives has ensured VICLA’s significant market share in Italy as well as in the rest of Europe and North America.

The company has set ambitious goals for itself. “Everything is clearly pointing to growth,” states Nucci. VICLA expects to double production within the next three years. There’s already plenty of space for it.

**PRESS BRAKES LEAD TO SUCCESS**

VICLA generates about 10 percent of its revenue through guillotine shears, but press brake sales make up the lion’s share – about 90 percent. The company offers nine model series with bending forces from 300 to 3,200 kN for various purposes. The presses weigh between 3 and 90 tons; their height ranges between 2 and 5.3 meters; and they can handle metal sheets between 1.25 and 8.10 meters long.

The flagship of these presses is the .SUPERIOR series, distinguished by its high speed and precision. These machines offer the further advantage of extensive expandability through add-on modules such as Clever Crowning or Flex. Such enhancements represent a significant reduction in labor, since they can perform corrections to the bending process without operator intervention. The modern clean lines of press brakes by VICLA also make a good visual impression, thus proving the proverbial Italian sense of aesthetics.

The HOERBIGER ePrAX® drive system, which combines electric and hydraulic elements in a single concept, is a performance-determining component of .SUPERIOR press brakes. The electrohydraulic system eliminates the essential problems of both drive concepts and instead relies on the combination of their strengths.
“WE CONSIDER OURSELVES AS PARTNERS ON EQUAL FOOTING.”
Corrado Nucci, Executive Director and Co-Founder of VICLA

Top left and bottom: The core competencies of VICLA lie in design and production know-how. The result is leading-edge machines well known for their high-level performance characteristics.

Bottom right: The ePrAX® system allows VICLA customers to enjoy numerous advantages. Depending on the installed ePrAX® variant, energy savings are between 55 and 78 percent compared to conventional drives. The hydraulic fluid requirement is reduced by approximately 70 percent.

Marcello Ballacchino, President and Co-Founder of VICLA; Corrado Nucci, Executive Director and Co-Founder of VICLA
In contrast to an all-electric actuator, HOERBIGER ePrAX® is powerful and durable, thanks to the integrated hydraulic system. Because of its compact, closed design, its operation is clean and free of leaks, and it doesn’t require oil lines. Like an electric drive, the closed system is attached to the frame of the press brake with a few cables and eight screws. The intelligent electrohydraulic system operates with hydraulic fluid that the user does not see – yet the system is powerful, fast, environmentally friendly, energy efficient, and especially economical due to reduced cycle times. Thanks to the closed remote drive units, the customary complexity involving piping and a central oil supply system has been eliminated. Previously, at least a 250-liter tank was required in the top clamping bar. With permanent lubrication and the system’s compact, closed design, the maintenance interval is extended to more than three years.

The ePrAX® system allows VICLA customers to enjoy numerous advantages. Depending on the installed ePrAX® variant, energy savings are between 55 and 78 percent over conventional drives. Likewise the hydraulic fluid requirement is reduced. Whereas in conventional presses 250-liter tanks are the rule, VICLA’s .SUPERIOR 110 press brake relies on 80 liters of hydraulic fluid divided between two tanks. “We want to provide our customers with more than just superior technology at competitive prices, but also seek to utilize our R&D activities to contribute to conserving resources,” explains Corrado Nucci.

It is just as important for VICLA to design its products so that occupational safety and ergonomic aspects are best taken into consideration. Thus VICLA machines meet the strictest EU regulations for occupational safety, are flexibly configurable, and offer a high level of usability and convenience.

POWERED BY PASSION

VICLA continuously invests in research and development, which is the prerequisite for product innovations and improvements. VICLA does not limit itself to just looking for better materials and components, but also seeks out approaches to con-
stantly improve assembly processes. “Curiosity is certainly a motivator in this quest,” Nucci states. Curiosity gives wings to creativity and is essential in developing innovative solutions. “Passion is also important,” Ballacchino adds. At VICLA passion is at the root of each project, every production phase and each technical detail. “It’s not an exaggeration to say that passion is the power that drives VICLA,” Ballacchino declares.

Furthermore, Nucci is convinced that close and long-term relationships with customers and suppliers alike also play an important role. “We consider ourselves as partners on equal footing,” he explains. Therefore, VICLA takes care to remain in touch with its customers. “For us, the sale of a machine is not an end in itself, but rather the start of a new venture,” Ballacchino declares. “We want our machines to demonstrate top performance to our customers while generating low follow-up costs,” Ballacchino says. Thus VICLA puts together customized service packages with rapid response times and a team of service technicians that can remedy mechanical, hydraulic, and electronic problems quickly and professionally.

When asked about their vision for VICLA, Ballacchino and Nucci don’t have to give it a lot of thought: “Our goal is to supply companies around the world with VICLA machinery based on leading technology which guarantees extremely simple and rapid production processes – combined with the highest standards of reliability, efficiency, and safety.”
YOUR PERSONAL HEAVY LIFTER

It's efficient, convenient, and easy on the back: with xetto®, HOERBIGER is bringing an easy-to-use transport and loading system to market. Thanks to powerful micro hydraulics and cleverly designed kinematics, it allows a single person to easily move and load as much as 250 kilograms of cargo. What is particularly useful is that the construction of xetto® is so compact that it fits effortlessly in the cargo bay of conventional station wagons and vans, and it even stows itself.

Text: Sven Peters  Photography: Nikolaus Schäffler, Peter Hartung

xetto® addresses everyday tasks of craftspeople and businesses: it only takes one person to load a compact transport vehicle with incredible ease – without exertion and straining the back.
In the best-case scenario, inventions are amazingly easy-to-use solutions to known problems where everyone asks why nobody thought of it sooner. “The answer to this question in terms of xetto® is most likely that, previously, the idea could not be technologically implemented in such a small space,” explains Alexander Vural, Loading Comfort Segment Leader at HOERBIGER. “With its newly developed, extremely space-saving micro hydraulics drive system, xetto® is setting new standards in compactness and makes the loading of up to 250 kilograms (550 pounds) of cargo considerably easier, more flexible, and most importantly healthier. It eliminates strenuous manual lifting during loading and unloading, which strains the back. Our new one-man system is not only a combination of a pallet truck with a transport cart, but also fits in smaller commercial vans without difficulty.”

“CAN SOMEONE GIVE ME A HAND HERE?”

“Can someone give me a hand here?” This question is all too common in trade, industry, and especially in construction, and addresses a problem for which previously no adequate solutions existed: loading cargo that is considerably too heavy for one person, but not heavy enough to justify extensive transport measures. A typical example is the loading and unloading of compact transport vehicles such as station wagons or vans. These are very popular among craftspeople and small business owners because they do not typically require a commercial driver’s license and are highly flexible to use. Such vehicles are frequently used to move building materials from one location to another, for example. Commercial vans additionally often must be
filled and emptied multiple times – a laborious undertaking in the past.

Without assistance and given the situation, these tasks frequently necessitated a cumbersome combination of conventional industrial trucks such as forklifts and pallet trucks. These are not only relatively difficult to operate, but also designed for loading trucks. Since they are too large to be stowed in the cargo bay of a station wagon or van, they additionally must be available at every point of use. This is tedious and inconvenient.

**NO HELP NEEDED**

This is where xetto® comes in: all it takes is one person to load a compact transport vehicle with incredible ease – without exertion and straining the back. “The operating principle of xetto® is simplicity itself, which is why it is so easy to operate,” adds Vural. “It picks up its cargo like a transport cart, then turns into a pallet truck and lifts the cargo into the vehicle. Then, the underbody structure is retracted, and xetto® is stowed beneath the goods. The process during unloading is reversed, and xetto® extends automatically out of the vehicle.”

At a low dead weight of only approximately 90 kilograms (198 pounds), the powerful micro hydraulic and kinematic system developed by HOERBIGER is a genuine heavy lifter: it is able to pick up a maximum payload of 250 kilograms and lift it to a maximum sill height of 800 millimeters (31.5 inches) in less than 20 seconds. Measuring 1,175 x 800 millimeters (46.25 x 31.5 inches), the load area offers quite a bit of space. xetto® is a virtual all-purpose tool since an adapter plate allows it to accommodate a wide variety of fastening and securing systems. Variable fastening elements are available to secure the load and flexibly adapt the size and shape of the load restraint to the goods being transported. xetto® is also particularly flexible when it comes to the integration of existing system solutions used in various businesses.

With xetto®, HOERBIGER is not only establishing a new brand, but also showcasing a fully integrated value chain: from development, production, distribution through multiple channels, and even service, everything comes from a single source. The product’s launch in Germany is scheduled for September 2016. End users will be able to purchase xetto® directly from specialist retailers – another first in HOERBIGER’s history.
CURRENT VEHICLES

FEATURING HOERBIGER DRIVE TECHNOLOGY

FORD FOCUS RS

It pulls its 350 hp and up to 470 Nm (350 ft·lb) of torque from an almost race-car like 2.3-liter four-cylinder forced induction engine that enthusiastically and cheekily revs up to 6800 rpms. If you’re so minded, the Focus sprints from a standstill to the 100 km/h (62 mph) mark in just 4.7 seconds, putting on the pressure inex- sensantly until it reaches the top speed of 266 km/h (165 mph). In turns, it delivers exceptional grip with lateral acceleration forces exceeding 1 g. If there wasn’t the legendary acronym RS – which at Ford originally denoted Rallye Sport – at the end of the designation, this technical data would belie the fact that this is a Ford Focus, which will be sold as a five-door model only.

Speaking of rallies and legends: the current production picks up the RS tradition with special features. It is the first-ever Ford Focus with all-wheel drive – of course one that, thanks to electronically controlled clutch packs, is one of the most dynamic and progressive bar none, and one that is absolutely deserving of the Ford Performance AWD designation. As a result, this third edition of the Ford Focus RS integrates its driver more directly than most other compact super sports cars into the driving dynamics. The fact that the six-speed transmission is designed for manual engagement perfectly fits this picture. This is done via a 6MTT450 transmission made by Getrag Ford Transmissions, which has been optimized for faster and more accurate shifts, and upgraded with stronger key components. The HOERBIGER components used in the Focus RS, specifically the triple-cone sintered friction systems equipped with the HS45 lining and the sleeves for gears 1 and 2, help the car to take off as if it were in a rally special test.

RENAULT KADJAR

Following the mini SUV Captur, Renault is now branch- ing out into the next higher segment of sports utility vehicles with the launch of the Kadjar. The compact SUV is the product of the alliance between Renault and Japanese carmaker Nissan. The SUV is more than seven centimeters (2.7 inches) longer and four centimeters (1.5 inches) wider than the Nissan Qashqai, which is based on the same platform. Powered by a range of engines from the Energy motor family, its propulsion is efficient on gravel roads or asphalt alike – with all-wheel drive as an option, of course. One gasoline and two diesel engine models, putting out 110 hp or 130 hp, cover any driver’s needs, whether they want dynamic power output or a subdued, refined driving style. Those who want to shift the gears themselves can do so in all Kadjar models with a robust and comfortable 6-speed manual transmission, whose qualities are enhanced by HOERBIGER with complete synchronizer systems for gears 1 to 4.

VW TIGUAN

When VW responded for the first time to the booming category of compact SUVs by debuting the Tiguan in 2007, the vehicle instantly conquered major market share. Designed for off-road excursions and offering a variety of talents, it has since regularly dominated SUV registration figures in Germany, Austria, and Switzerland, and it is consistently one of the top performers across Europe as well. Now the successor model has pulled up – and it has all the features it takes to climb even higher on the ladder of success.

The new Tiguan, which has garnered prestigious awards for its innovation and design, is VW’s first SUV based on the MQB (Modular Transverse Matrix) platform that has already helped the likes of Audi A3, VW Passat, and, of course, the VW Golf achieve many of their esteemed qualities. Aficionados of the first Tiguan generation will perceive a change simply on stepping into the vehicle: despite a lower vehicle weight, the passenger compartment is significantly more spacious. Additionally, the cargo space sports a gain of about 145 liters (5 cu. ft.). The rear bench seat can now be adjusted up to 18 centimeters (7 inches), which offers maximum flexibility. The new, electronically controlled all-wheel drive system termed 4MOTION Active Control proves to be very versatile: the driver can choose one of VW Tiguan’s four modes (Onroad, Offroad, Snow, and Offroad Individual) to improve traction on varying terrain. The mechatronic 4WD heart beats in the form of an all-wheel drive clutch – featuring fundamental components made by HOERBIGER. The Group supplies the steel and sintered disks. The 4MOTION system in the VW Tiguan connects the rear axle as needed in the blink of an eye and variably distributes the power among all four wheels. At the same time, it is robust enough to handle trailer loads of up to 2.5 tons.
With the launch of the Kadjar, Renault is branching out into the sports utility vehicle segment.

The legendary acronym RS at Ford originally denoted Rallye Sport.

The new Tiguan: already garnering prestigious awards for its innovation and design.
On March 1, 2016, a joint venture between HOERBIGER and Chengdu HAONENG Technology Co., Ltd. of Chengdu, China, started operations. Together the two companies can offer customers not only a product portfolio that encompasses all components of synchronizers, but also the best system solutions from one source.

For customers, the cooperation creates significant added value. The joint venture’s headquarters are in Shanghai, from where all customer inquiries are being handled centrally. HAONENG, one of China’s leading manufacturers of synchronizer components, has operations in three locations: In Luzhou, HAONENG manufactures brass synchronizer rings, engagement bodies, and crucial components for dual clutch transmissions. The plant, known in the industry under the Luzhou Changjiang brand, is the leading producer of synchronizer rings in China. The Chengdu plant specializes in forged steel synchronizer rings for passenger cars and commercial vehicles. The Chongqing plant is a professional manufacturer of sleeves and hub systems, supplying the market with excellent-quality, cost-efficient products.

The HOERBIGER plant in Changzhou is another location of the joint venture entity. It manufactures friction systems, engagement rings, and synchronizer rings from steel sheets.

Operating under the name HAONENG HOERBIGER DriveTech (Shanghai) Co., Ltd (HHDTS), the cooperation within the scope of the joint venture covers the engineering, sale, and trade of synchronizer components and systems for automobile transmissions in China.
“We offer our customers in China the best of two worlds – time-tested technology and quality at competitive local prices,” explains Michael Haberl, CEO HAONENG HOERBIGER DriveTech (Shanghai) Co., Ltd.

The vision and mission of HOERBIGER and HAONENG are an excellent fit. The vision that the newly appointed management has formulated for the joint venture is clear:

“We synchronize – 我们同步一致”
FIRST JOINT TRADE SHOW PRESENTATION OF HOERBIGER AND HAONENG

HOERBIGER and HAONENG had their first joint trade show presentation at the 8th TM Symposium held in Beijing, China, on April 28 and 29. The TM Symposium China is considered the largest vehicle transmission and drive technology event in China.

Aside from the shared product portfolio, the two companies also exhibited select in-house developments not integrated into the joint venture. These included the HOERBIGER CompactLINE and the pneumatic gearshift support system from the Commercial Vehicles Segment. In addition, Zhiyun Dai, HDC Development employee, and Sebastien Dupré, Project Manager from the Commercial Vehicles Segment, gave technical presentations in which they shared information about current products and developments from their areas.

Three questions for Michael Haberl, CEO of HAONENG
HOERBIGER DriveTech

What prompted HOERBIGER to further increase its exposure in China?
China is the largest growth market for synchronizers, and it will remain so in the coming years. The joint venture opens up tremendous market potential for us and outstanding opportunities to further expand our synchronizer business in China.

What added value does the joint venture offer our customers?
Through combined efforts and an unrivaled product portfolio, we will be able to serve almost the entire Chinese market, ranging from synchronizers and system solutions for vehicles in the lower price segment all the way to the premium sector. Together with HAONENG we offer our customers the best of both worlds: leading technology from Germany at competitive local prices.

Please explain what is behind the vision of HAONENG HOERBIGER.
We synchronize – 我们同步一致: It means that we are bringing our strengths together, that we will grow jointly, and that we will collaborate more with our customers and partners. Our success will be shared success as a result of trust, fairness, hard work, and cooperation – simply put, as a result of an excellent working relationship.
1 Marcel Billaudet (42) 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 – portraiture to reportage. Besides that, he also enjoys shooting architecture and stills.

2 Charles Butcher (53) is a British freelance technology journalist and editor operating under the name ThisWritingBusiness. He has a degree in chemical engineering and has worked as editor of technical publications including The Chemical Engineer and Chemical Technology Europe.

3 Marcus Geige (49) has headed the Marketing Communications team of HOERBIGER in Vienna, Austria, since the beginning of 2013. While pursuing his engineering degree at the University of Applied Sciences Heilbronn, he was active in technical journalism. In 1997, he was one of the first graduates of the post-graduate course in journalism at the University of Hohenheim, where he specialized in communication science. After graduating, he worked as a senior PR consultant for various PR agencies and as a communications manager for several companies in the B2B sector.

4 Jens Geisel (53) is the Head of Corporate Publishing and Internal Communications at HOERBIGER. He coordinates the daily editorial activities for the customer magazine HOERBIGER@MOTION and the employee magazine HOERBIGER@MOTIONinside. Another focal area of his work is the online communications platform HOERBIGER Community.

5 Peter D. Hartung (59) 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, the former businessman now supplies his customers with vivid photographs in the fields of technology, industry, and architecture, as well as portraits. His work is also featured in books about the city he lives in as well as other municipalities on topics such as agriculture, 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 Sabine Mühlenkamp (46) lives in Karlsruhe. After being employed for several years as an editor by PROCESS, a leading publication for the chemical and pharmaceutical industries, she now works as a freelance journalist focusing on processing technology, process automation, and bulk goods technology. Mühlenkamp, who has a degree in engineering, regularly publishes articles in publications such as vdi-nachrichten, PROCESS, SCHÜTTEGUT, PharmaTEC, and PROFIBUS Journal.

7 Sven Peters (32) has a degree in sociology and German studies. After holding various positions at newspapers and radio stations, in 2014 he joined the agency DIE WORTWERKSTATT near Tübingen as a junior advisor. At the agency, he provides support to international companies in the automotive field, covering everything from traditional public relations and social media to writing technical articles.

8 Chris Pipes (50) is Creative Director of Fifth Element Design Ltd. based in the Midlands, South Derbyshire, United Kingdom. Fifth Element Design delivers a range of professional marketing communication services tailored to the client’s needs. Pipes himself is an expert in industrial and commercial photography, graphic design, and web management. After more than 25 years in the business, photography remains his real passion.

9 Nikolaus Schöffler (40) has lived and worked in Munich as a freelance photographer since 2000. The state-certified photo designer completed his training between 1997 and 2000 at Lette Verein in Berlin, and he deepened his professional expertise in 2004 and 2005 with camera operator coursework at the Bavarian Academy for Television. Since then, he has worked for leading companies such as Intel, Asus, Toshiba, and Burda. He focuses primarily on still life and architectural photography, though in recent years he has also become a specialist for fashion and people photography.

10 Siegfried Sperl (50) from Munich, Germany, has worked as a photographer since 1993. After completing his training in Munich and Paris, he worked for studios and advertising agencies before becoming self-employed in 1997. His clients include companies, media outlets, law firms, and PR agencies. His focal areas are portraits of people in their environment for features and independent projects. Other topics include architecture and press photography.

The contents of the articles, in particular quotes, opinions, and assessments of markets and technologies, do not necessarily reflect the views of the publisher.

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