

Editorial

Dear readers,

You have before you the second issue of HANNS. A Pioneers magazine, which gives you regular news updates and interesting facts from the world of HOERBIGER. Thank you for your great comments on the first issue and the many suggestions for future stories. Your feedback delights and motivates us.

In this issue, we would once again like to give you an insight into the work of our colleagues at HOERBIGER and show how we are driving global change together with our customers and contributing to a better future.

And if you missed the first issue of *HANNS*. A Pioneers Magazine, we recommend you visit www.hoerbiger.com. In our Newsroom you'll find all the articles from the first issue, and a PDF for download. The Newsroom also carries all the latest HOERBIGER news, plus background information from our Yearbook, so it's the ideal place to browse between issues of HANNS, A Pioneers magazine.

We hope you enjoy reading.

The editorial team communication@hoerbiger.com

Click here to go to the newsroom at www.hoerbiger.com.





Hydrogen — more than just a fleeting acquaintance for HOERBIGER



Enabling change

WHY "HANNS"?

With the invention of the steel plate valve in 1895, the Austrian engineer Hanns Hörbiger (1860-1931) not only laid the foundation for today's HOERBIGER Group; his innovation was also one of the key technologies for industrial development.

Today, HOERBIGER helps its customers and partners in various industries around the globe with performance-defining products and services to improve the performance and safety of their products and operations, save energy, reduce emissions,

Interview with Agnieszka Zając

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HOERBIGER celebrates 60th US anniversary



Martina Hörbiger (centre) with Hubert Wagner (next to her on the left) at HCA's first location in New York in the 1960s.



For future generations, HCA employees bury a time capsule with current **HOERBIGER** items in front of the main building in Pompano Beach.

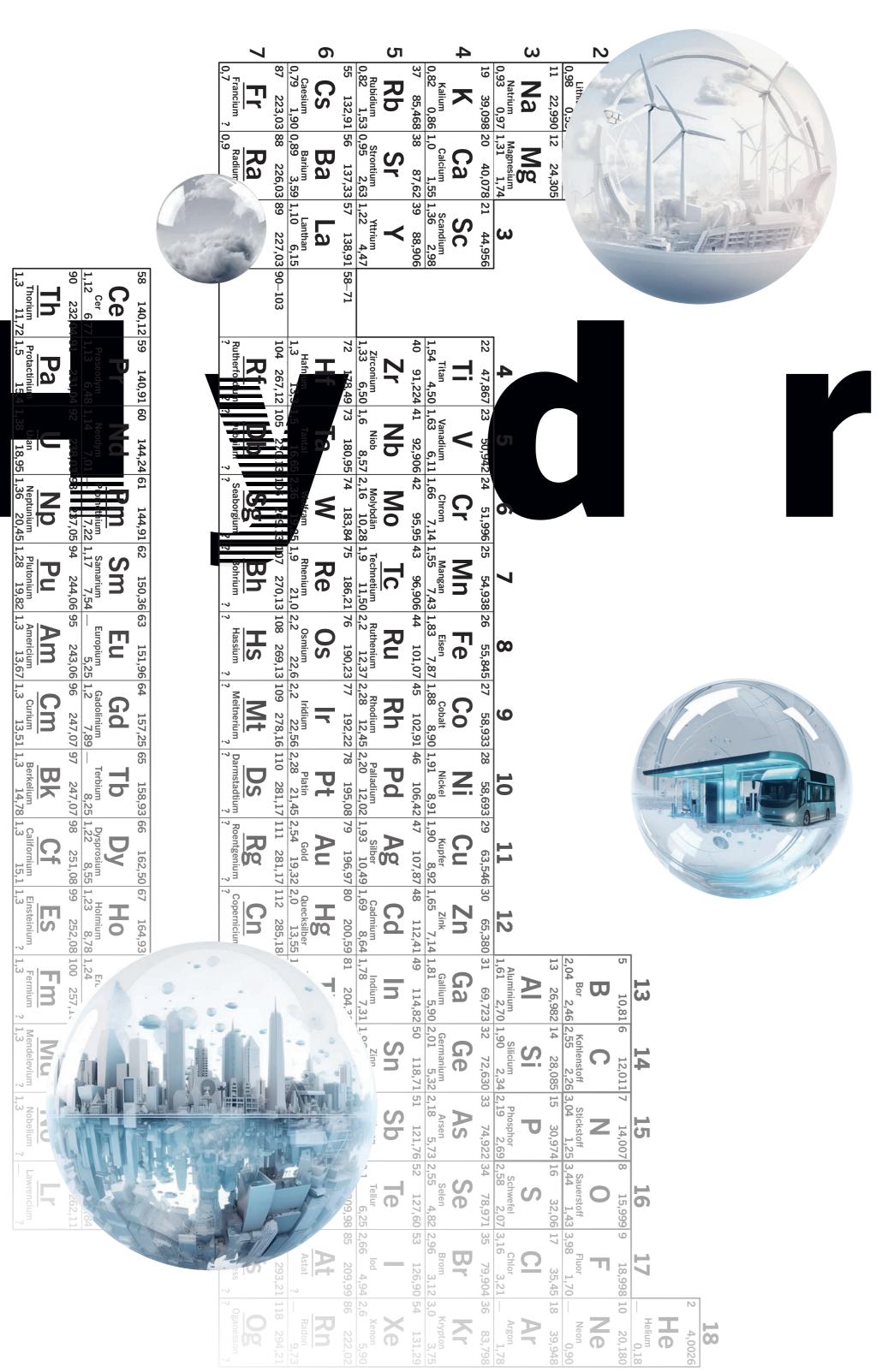
HOERBIGER Corporation of America (HCA) is celebrating its 60th A strong foundation for future success birthday in 2023. Founded in a small suburb of New York City, today the company has more than 300 employees who ensure that the HOERBIGER brand is regarded as a seal of quality and excellence in North America.

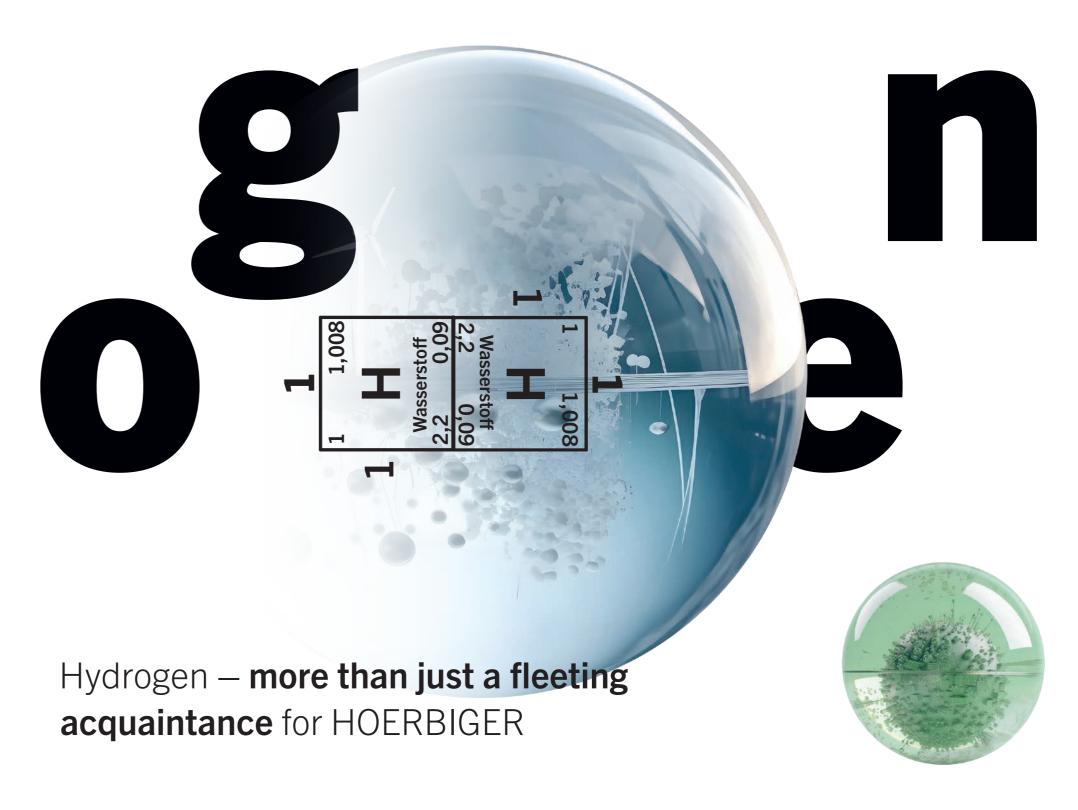
In keeping with the HOERBIGER Group's corporate values – pioneering spirit, courage, closeness and fairness – the founding of HCA 60 years ago marked a bridge into the new world. In the early 1950s, Martina Hörbiger, owner of the company and forward-thinking entrepreneur, recognized that and an inclusive corporate culture," says Dyrdol. it was necessary to establish a presence in the United States and Canada to better support the rapidly growing compressor industry there. To build up the company, she sent young, motivated and entrepreneurial employees to Read the whole interview with Arek Dyrdol online in our newsroom. this new and distant market. One such pioneer was Hubert Wagner, who founded HOERBIGER Corporation of America in Roslyn, New York on April 9, 1963. In the years that followed, HOERBIGER established and continues to nurture many strong customer relationships in the U.S. and Canada

Building up local production

By 1965, HCA sales had tripled and Wagner decided to set up local U.S. production in Queens, New York, to shorten delivery times for American customers. In 1979, HCA expanded again and relocated to South Florida. In Pompano Beach, the company built a centralized and more efficient production facility, which today is strongly linked to the region. "Over time, the relationship with our customers and business partners has developed into a strong foundation of trust, collaboration and shared success," says Arek Dyrdol, Managing Director of HCA and Head of North America at HOERBIGER. In addition to training, technical support and consulting, HCA promotes product development, marketing and transparent communication side-by-side with customers and partners to align goals and drive mutual success.

Today, HOERBIGER's presence in North America includes 11 locations (including both manufacturing and service facilities) with additional Deublin, Altronic and IEP Technology locations across the U.S. This network provides the region's most comprehensive range of products, services and customer support. HOERBIGER intends to continue expanding its presence on the continent in the future: "We are pursuing various initiatives for sustainable growth – supported by committed employees, a strong spirit of innovation





HOW HYDROGEN CAN SCORE POINTS:

The increasing demand for clean and sustainable energy has shifted the focus to hydrogen as a key component for a green future. Hydrogen, for example, is of central importance in efforts to decarbonize industrial applications. In addition to established battery technology, hydrogen engines and hydrogen fuel cells could also play a decisive role in emissions-free mobility.

The public debate on hydrogen as an energy carrier has gone through various phases over recent decades. During the oil crisis of the 1970s, interwhen demand is high. This helps est in alternative energies began to grow. Hydrogen was seen as a clean fuel that could potentially help reduce dependence on fossil fuels. The following decades saw ups and downs in interest in hydrogen. In the 1990s, hydrogen regained popularity and the idea of using it as a clean fuel for vehicles was intensively researched at the time - but no concrete applications managed to establish themselves on the market.

A CO₂-free energy source

Today, scientists, politicians and industry experts see hydrogen as a key component for a green energy future: When it is burned in a hydrogen engine or when it reacts in a fuel cell, it emits only water vapor as the exhaust, with no climate-damaging CO_2 emissions. Hydrogen can be obtained from various sources, but particularly relevant in terms of climate protection is "green hydrogen" made by electrolysis using renewable energy sources such as wind, water or solar. In contrast to other manufacturing processes, the production of green hydrogen is environmentally friendly and emissions-free.

Energy storage: Renewable energy, such as solar and wind power, is often intermittent and dependent on weather conditions. The ability to use hydrogen as an energy storage system makes it possible to store surplus energy during periods production and can be transported to stabilize the energy supply.

Transportation over long distances: Hydrogen can be transported over long distances, enabling global trade in renewable energy. This is particularly relevant when it is produced in regions with excess

Versatile applications: The ability to transport hydrogen opens the door to a wide range of applications, from use in industry and transportation to providing energy to remote areas that are not directly connected to renewable energy of hydrogen makes it particularly interesting for heavy-duty and commercial vehicle applications (ships, trains, trucks, buses, construction machinery, tractors and airplanes), where electric batteries as we know them in the passenger car sector are reaching their limits.

What is electrolysis?

Water (H₂O) is broken down into its components, hydrogen (H₂) and oxygen (O), by electrolysis. This is done with the help of electricity, which is preferably generated from renewable energy sources.

HOERBIGER's hydrogen activities

The HOERBIGER Divisions and Business Units traditionally are active in very different industries - overlaps are rare. The future topic of hydrogen is quite different: All areas of our business are working together on projects for the energy carrier of the future, contributing the expertise they have accumulated over decades. Their technologies and production expertise is as diverse as the solutions they provide:



As an expert in reciprocating compressors and challenging applications, the Compression Division has a long familiarity with hydrogen. The lightest element in the periodic table must be compressed to extremely high pressure for common applications, but is also a very "searching" gas that is difficult to seal. In addition, many new applications in green hydrogen require compressors to be operated unlubricated. All in all, this means hard work for the rings and packings that ensure sealing in the reciprocating compressor, as well as for the HOERBIGER engineers who are researching new, particularly durable materials in the hydrogen laboratory at the Vienna site. Dr. Markus Digruber, Head of Innovation and Business Development, Compression Division, says: "In addition to valve and control technology, rings and packings are at the heart of the performance and durability of a reciprocating compressor. In 128 years of our company's history, we have built up unique expertise that we can now draw on for new developments in the field of hydrogen." And additionally: With its market access, technological ideas and long standing relationship with the largest reciprocating compressor manufacturer in the world, the HOERBIGER Group joined forces with ARIEL to jointly develop a compressor for hydrogen fueling stations and bring it to market. A first pilot plant will soon go into operation.



Automotive

"In 128 years of our company's history, we have built up unique expertise that we can now draw on for new developments in the field of hydrogen."



In the 1990s, the Automotive Division revolutionized the

production of synchronizer rings for manual transmissions.

Where other market players milled and forged, HOERBIGER

was able to offer high-quality products at competitive prices

time, HOERBIGER perfected the coating of these rings – the

so-called friction linings - and thus enabled countless gener-

wear. But what do transmission components have to do with

hydrogen? The keyword is bipolar plates: Piled up in stacks,

they form the core of an electrolyzer. Though their production

sequent coating," says Dr. Robert Braun, Head of Sales and Product Lines, Automotive Division. "The manufacturing accu-

racy and cleanliness of a bipolar plate have a significant impact

on its performance." Metal forming and coating in large quanti-

ties, with high quality and at competitive costs? The Automotive Division has perfected all that in three decades of automotive

production. It is precisely these skills that customers are looking

for. No wonder hydrogen is one of the Division's most important

future fields alongside electromobility.

in impressive quantities using steel forming. At the same

ations of vehicles to shift gears comfortably with minimal

In order to orchestrate

the various hydrogen

activities within the

HOERBIGER Group, the

units have established

the Hydrogen Oppor-

tunity Team: "Through

regular exchange, we

ensure that synergies and

know-how are optimally

utilized," says Bernhard

Zemann, who coordinates

the team in addition to

his role as Head of the

H₃ Incubator and the

Engine Business Unit.

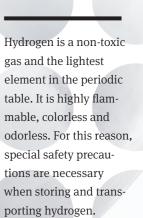
Engine

Within the HOERBIGER Group, the Engine Business Unit specializes in gaseous fuels and is a pioneer in hydrogen mobility. In 2004, BMW launched the Hydrogen 7, the world's first production vehicle powered by an emissionfree hydrogen engine. At that time, HOERBIGER supplied the injectors, which were key components for the hydrogen engine's intake manifold. Four years earlier, HOERBIGER had already supplied hydrogen valves for the small-series BMW 750hL – one of the highlights of Expo 2000 in Hanover. Thanks to these decades of experience, Engine is now the technology and innovation leader for hydrogen injectors and ignition systems and also the organizational home of the HOERBIGER H, Incubator. This is where the Group bundles all its hydrogen activities that still require a certain amount of time to reach market maturity. The aim is to develop hydrogen solutions in the incubator, from idea to series production, and to make maximum use of synergies. In the incubator, automotive products such as the Hydrogen Pressure Control Unit (HPCU) for fuel cells and the Refueling Data Interface (RDI) for hydrogen fueling stations find both the right starting conditions and the environment required for longer-term development.

The high energy density of hydrogen makes it particularly interesting for heavy-duty and commercial vehicle applications, where electric batteries as we know them in the passenger car sector are reaching their limits.



Only a very small amount of energy is required to ignite hydrogen, so controlling static electricity is of crucial importance. Since the crash of the airship Hindenburg in 1937, the public has been aware of how dangerous hydrogen can be. According to the investigation report, the hydrogen was ignited by sparks caused by an electrostatic discharge. With the upswing in hydrogen mobility, the construction of thousands of hydrogen fueling stations is now planned worldwide, with strict international standards to manage the risks posed by static electricity. Newson Gale, a company in the Safety Business Unit and part of the HOERBIGER Group since 2016, has been a leader in protection against electrostatic hazards for over 40 years. The company develops grounding systems that stop electrostatic charges accumulating and thus protect human lives and equipment. For 2023, Newson Gale forecasts a threefold increase in sales of hydrogen applications compared to 2022. The company has supplied protection systems to the two leading manufacturers and distributors of hydrogen in Europe, as well as the top manufacturers of hydrogen fueling stations in Germany, the UK and Canada.







is still very complex, large-scale production offers considerable savings potential and could therefore help hydrogen The keyword is bipolar technology achieve a breakthrough. "One option for largeplates: Piled up in scale production is the cold forming of sheet metal with substacks, they form the

core of an electrolyzer.

Learn more about electrolysers on the HOERBIGER website







As a long-standing, successful family-owned company and with a foundation as its majority owner, HOERBIGER has a corporate culture that has always included long-term thinking. Sustainable management and future viability are central goals of the Group strategy. This applies not only to the company itself, but especially to solutions that HOERBIGER uses to enable its customers to run their operations in a more environmentally friendly manner.

Since 2021, HOERBIGER has operated a comprehensive program to make its own processes and locations more sustainable. At a time when fundamental changes are affecting many can significantly increase the efficiency of reciprocating of HOERBIGER's traditional business areas, however, the Group's activities offer even greater leverage for sustainability. their operators can reduce energy-related emissions and In light of climate change and the associated increasingly stringent regulations worldwide, the industrial environment has been changing rapidly for several years. As a result, the Group has had to reinvent its activities in many respects.

Fewer emissions for a better tomorrow

In addition to various projects in the field of electromobility and hydrogen as the fuel of the future, HOERBIGER aims to become the leading solutions provider for reducing emissions. A very good example are the Compression Division's activities in the oil and gas industry. According to scientists, methane is responsible for around 25 percent of current global warming. Better sealing of reciprocating compressors and boreholes can prevent methane from escaping. Compression offers innovative solutions that specifically target such fugitive emissions and avoid the negative consequences of gas leaks. In addition, driving large reciprocating compressors requires

large amounts of energy, the production of which emits CO₂. ty of life of citizens. Compressor control systems and valves from HOERBIGER compressors. As a result, they require less drive power, so save costs. In this way, the Compression Division helps the oil and gas industry reduce its emissions and comply with stricter environmental standards while improving the overall efficiency of its operations.

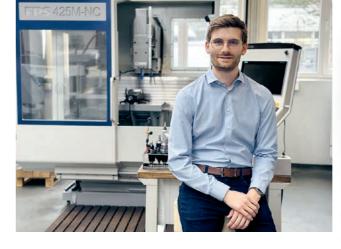
is a lush green island in the middle of Singapore's urban area. Despite the geographical confinement, the Singapore government has made a point of leaving large areas to nature and wildlife. Over 3,300 hectares of the country are parks or green open spaces. Strict environmental regulations are further measures to improve the health and quali-

A large petrochemical company in Singapore was struggling with the problem that one of its reciprocating compressors was leaking considerable amounts of gas into the atmosphere in an uncontrolled manner, due to its design. This was damaging the environment and posing a risk to staff. Many sealing designs had been tested in the past, all of which failed. Only HOERBIGER was able to find a solution to the problem: Upgrading the entire compressor gas and oil sealing system by integrating an advanced nitrogen purge system, the HOERBIGER Emissions Control Panel (ECP). Nitrogen purging is an effective way to eliminate uncontrolled gas leaks from a compressor, ensuring the safety of the operating crew while protecting the environment.

For more stories about emission solutions from around the world, visit the HOERBIGER website:



How does a rotary union...



Al cuts manufacturing costs while improving quality and sustainability

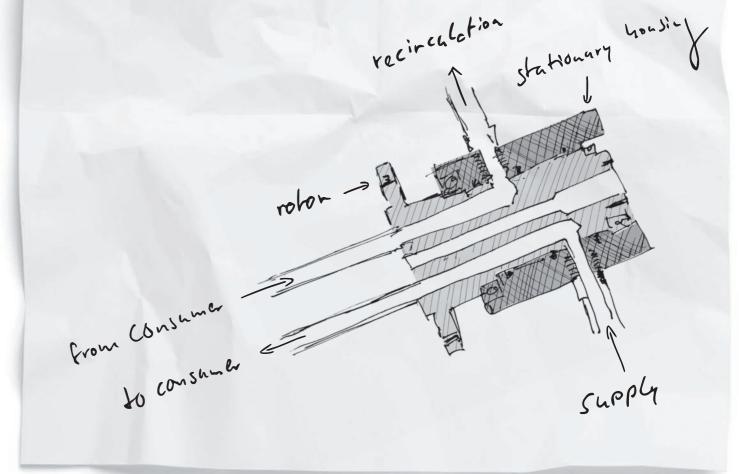
Johannes Weinert works on artificial intelligence (AI) in the automotive sector. His goal: to use innovative Al solutions to make production processes holistically more profitable and so increase both the quality and the sustainability of the products.

If anyone in the automotive sector is ahead when it comes to AI, it is Johannes Weinert. "My job is to meaningfully integrate and development processes," explains the young engineer. "Our focus at the moment is to reduce production costs with our AI projects and at the same time further increase the quality and sustainability of our production through AI. As well as the work we are already doing in house, next year we will also be involved in an industrial research project on this topic."

According to Weinert, there is no shortage of ideas. He is currently working with his team of students and master's students on five specific projects. Some of these relate to battery technology, such as AI-supported production of the bursting membrane – a key battery component that is essential for safety.

Another solution that has already gone live on several machines, says Weinert, is the use of AI to detect tool breaks. The AI-controlled machine stops automatically if the tool breaks, dramatically reducing waste caused by missing parts, cutting downtime and extending the lifespan of the equipment. According to Weinert, the benefits are clear: "We are currently able to stop machines in such a way that the number of missing parts per break is reduced from 100 to just three."

Although the use of AI is already showing initial success, its potential is almost limitless, according to Weinert, who trained as a mechatronics engineer at HOERBIGER and then completed a dual course of study with a master's degree in automation and robotics. "Thanks to AI we will produce even more accurately, precisely, sustainably, quickly and therefore more competitively in the future," he says. Weinert is not afraid of AI – on the contrary, it's clear to him that "AI will support us humans at work by freeing us from monotonous, tedious or even dangerous tasks."



...actually work?

Deublin, the world's leading provider of rotary unions and part of the HOERBIGER family since 2019, has revolutionized the functionality and performance of rotating systems with its products. Frank Reimold, member of artificial intelligence and machine learning into our production Deublin's global leadership team and managing director for Europe, the Middle East and Africa, explains what a rotary union is and how it works.

So what actually is a rotary union?

Frank Reimold — A rotary union is a technical component that plays an important role in many areas of our daily life, even if we often don't even notice that it exists. Essentially, it's a type of rotary seal used in machinery to transport liquids or gases from a stationary source to a rotating component without causing leaks.

A bit more detail, please!

FR — To better understand the concept, I always use the example of a water hose connected to a rotating drum. Without a rotary union, the hose would twist and could be damaged. With a rotary union, water can flow through the What makes a good rotary union? rotating component without twisting the hose.

And where exactly are rotary unions used?

FR—Rotary unions are used whenever hydraulic oil, compressed air, cooling water or any other fluid needs to be fed into a rotating body. Rotating axes or assemblies are the basis for a wide range of manufacturing processes, from machine tools and steelworks to bottle filling systems and chip production. Ultimately, rotary unions connect to everything in our daily lives. Whether it's your daily newspaper, a plastic bottle, furniture veneer, a hip joint, a car wheel, a cellphone, a power plant or a flour mill – Deublin rotary unions ("Deublins" for short) are used in all manufacturing

FR— The quality of a rotary union lies in its leak-tightness, so that no liquids or gases can escape between the stationary and rotating parts. A leak would lead to a serious loss of performance or, in the worst case, to a machine failure and high follow-up costs. Lifespan and reliability are equally important, considering that some rotary unions are rated for speeds up to 100,000 revolutions per minute.

Agnieszka Zając has been managing the **HOERBIGER** plant in Bolesławiec since 2015, where 250 employees manufacture performance-determining products for various **HOERBIGER** divisions. Her focus is on close customer relationships and a culture in which everyone works toward a common

Agnieszka, your heart is in the automotive industry. How did that come about?

Agnieszka Zając — I was born with a passion for technology. My father is a great technician who sparked my interest in the subject at a very early age. My friends had dolls, while I much preferred playing with calipers and screwdrivers. So, after my schooldays it was clear that I should start studying engineering at the Wrocław University of Technology. During an internship I was able to gain my first experience in the automotive industry. Although that was a very intense time, I knew right away that I wanted to work in this industry after graduation.

And what happened next?

AZ — After graduating, like many of my fellow students, I started work in the IT industry as a programmer before I was offered the opportunity to help set up a plant for a German automotive supplier in Legnica. I started as a quality engineer for the new plant, but very quickly I was able to take over the management of the quality department and thus the responsibility for all the company's plants. Then, in 2012 I joined HOERBIGER as Quality Manager of the Bolesławiec plant, which I have been managing since 2015.

You produce not only for the Automotive Division, but also for other HOERBIGER Business Fields. What happens at your plant?

AZ — We manufacture a wide range of products. For the Automotive Division, we produce hydraulic and pneumatic parts for many well-known automotive manufacturers. For the Automotive Division, among others, we produce hydraulic and pneumatic parts for many well-known automotive manufacturers as well as blanks for sleeve production in Oberstenfeld and Schongau. And last but not least, we also work for the Engine Business Unit, for which we manufacture injectors.

Is such a broad product range an advantage or more of a challenge?

AZ — Both! For me as a plant manager, it's a clear advantage if we have customers from different industries. This makes it easier to balance out fluctuations in orders. For my team, on the other hand, the large number of different products is a real challenge because it brings with it an incredible variety of processes. I can proudly say that my colleagues have expertise that's extraordinarily broad and at the same time deep. Without such skills it would not be possible to produce so many different parts.

So does that make it difficult to find new colleagues for the

AZ — HOERBIGER is very well known in our area and enjoys an excellent reputation in the industry. That makes the situation here somewhat more relaxed than in other countries. But we work hard to be seen as an attractive employer. We offer very good working conditions, and we invest a lot of energy in training and further education. Particularly important to me personally are the good working atmosphere and the positive corporate culture that we cultivate together. In my opinion, these are one of the most important criteria, which is why we can keep up with the major local automakers.

Your team and you place great emphasis on innovation, whether it's developing new products or optimizing processes. How do you personally deal with the need to constantly question or even reinvent yourself?

AZ—For an engineer, there's nothing better than solving a tricky problem or tinkering around with something new, is there? No, seriously: I enjoy constantly questioning myself in order to optimize or rethink things. Anyone who works in production knows that what's good today won't be enough tomorrow. This is the only way we can achieve our goals of increasing the quality of our products, reducing manufacturing costs and protecting the environment through continuous improvement.

A particular strength of the plant in Bolesławiec is your close customer relationships. How does this cooperation work in practice and what are the advantages for our customers?

AZ — Being close to our customers enables us to respond to their requirements in a much more targeted way. The automotive industry is undergoing enormous change and the pressure is correspondingly great. Through our openness, speed and flexibility, we have earned the trust of our customers over the years. They know that they can rely on us and that we will stand by them as a partner in the development and series production of their future products.

What's the most difficult task in your job as plant

AZ — A plant is a very complex system. My most difficult and at the same time most important task is to create a culture in which all teams work toward a common goal. This is the only way to reconcile the individual goals of colleagues from production, quality and logistics. Even though we have detailed discussions every day, as a team we also have an overarching, common goal. I consider it a great privilege that I have been working with many of my colleagues for a very long time and that we can rely on each other one hundred percent.







SELF-DETERMINED

The role of the HOERBIGER Foundation within the Group

In 1982, Martina Hörbiger established the HOERBIGER Foundation in Switzerland with the aim of preserving HOERBIGER's independence and entrepreneurial legacy beyond her death. Today, the Foundation controls the Group as the majority shareholder. The Board of Trustees is composed of the family shareholder Christiana Hörbiger, active and former members of the Board of Directors, and advisors with long-standing ties to the Group.

In the four decades of its existence, the HOERBIGER Foundation has reliably guaranteed the stability and independence of the company and set the framework for a future-oriented strategy. Unlike listed companies, HOERBIGER does not have to rush from one quarterly report to the next and meet shareholders' expectations of short-term returns. Instead, the Board of Directors and the Executive Board can think and act for the long term.

On the other hand, remaining unlisted gives HOERBIGER no opportunity to take advantage of the capital market. Accordingly, the Group must generate its own funds for further development and set itself ambitious profitability targets. With this in mind, the Foundation leaves almost all of the corporate profit within the Group, which can invest it in further growth.



Gardner Systems joins Deublin

Deublin Company, a member of the HOERBIGER Group and leading provider of steam joints and siphons for the paper industry, announced in July that it has joined forces with its long-time partner and supplier Gardner Systems. This alliance broadens Deublin's capabilities in the design, supply and installation of steam and condensate systems for paper machine dryer sections. Gardner Systems was founded in 1967 and is headquartered in Appleton, Wisconsin.



Successful launch of "The HOERBIGER Way" in Florida

"The HOERBIGER Way" is a training program that forms a central pillar of the group-wide Leadership Development Campus. Participants from various disciplines and divisions learn the HOERBIGER Group's strategy as well as common tools and methods. In this way, the program promotes networking among managers throughout the HOERBIGER Group. The training was led by internal executives, including CEO Thorsten Kahlert, who contributed their expertise on key topics such as group strategy, innovation, customer orientation, finance, and people development. Following the successful pilot project, "The HOERBIGER Way" will take place quarterly in the various regions starting in 2024.



HOERBIGER at hy-fcell in Stuttgart

For the third time in a row, HOERBIGER was again represented at the international hydrogen and fuel cell trade fair in Stuttgart. With over 3,000 participants and 171 exhibitors from all over the world, hy-fcell once again became the industry meeting point. For the HOERBIGER teams, it was an opportunity to present innovative products and developments in hydrogen technology and to make new contacts.



Highest participation in employee survey since 2016

In September, the Voice4Excellence global employee survey took place. With an impressive participation rate of 82%, HOERBIGER employees demonstrated yet again their commitment and engagement. Aladin Huwyler, Head of People & Culture, said: "Success is only possible with the right people and the right culture. An open feedback culture is crucial to this. Voice4Excellence is a structured way to gain valuable insights into the strengths and areas of development at all organization levels of the company. The high participation rate shows the strong will of all of us to shape HOERBIGER together."



New U.S. service location in Louisiana

In June 2023, HOERBIGER opened its newest U.S. service facility in Port Allen, Louisiana, with an open house and celebration. Participants included more than 30 local customers, who enjoyed tours, a barbecue, raffle prizes and educational training sessions. Located just minutes from downtown Baton Rouge, the branch offers a comprehensive range of services, including repairs, machine tooling, onsite engineering staff support and field services.