SANTA CRUZ DE LA SIERRA, BOLIVIA: The branch in Santa Cruz de la Sierra is just one of HOERBIGER’s Latin American sites. Others are located in Argentina, Brazil, Chile, Ecuador, Columbia, Mexico, Peru, and Venezuela. HOERBIGER has operated in Latin America since 1978 and offers a wide range of products and services to customers from the value chain in oil and gas production as well as from the process industry. HOERBIGER recognized the potential of the region early on and benefits from the broad-based exposure. (Page 34)
Ladies and gentlemen,

At the end of 2010, HOERBIGER commemorated Hanns Hörbiger’s 150th birthday. Demonstrating Pioneering Spirit and Courage, he laid the foundation for the HOERBIGER Group at the beginning of the 20th century.

The long-term success of innovative business models and products is driven by entrepreneurially thinking notable individuals—this held true during Hanns Hörbiger’s times and applies to this day. At HOERBIGER, we refer to these skills as Management Excellence: the talent to translate new product ideas into sustainable business success and thereby lay the foundation for continuous growth.

To this day, values and traditions, along with the vision and ingenuity of families of entrepreneurs, have shaped the companies we present in this edition of HOERBIGER@MOTION: BITZER, a leading company in refrigeration engineering, Neuman & Esser, producing reciprocating compressors for over 100 years, and Bystronic Maschinenbau GmbH, specializing in premium machine tools.

In features and interviews with entrepreneurs and managing directors, we attempt to explore the sustained international success of these companies. In addition to Management Excellence, two other success factors form the center: the consistent and long-term focusing on technological core competencies and an exceptionally stable operational position.

As a supplier of premium components, HOERBIGER has maintained business partnerships with BITZER, Neuman & Esser, and Bystronic for many years. Our goal is to continue to contribute to the long-term value added of these and all other HOERBIGER customers with our products and services.

At HOERBIGER, the theme of 2011 will be “On the Path to EXCELLENCE & Focus.”

EXCELLENCE is an essential part of the value proposition we provide day after day to our customers in the oil, gas, and process industries, in the mechanical and plant engineering industry, and in the automotive industry.

Focus, in contrast, sets our sight on our core competencies. We have resolved to continue to grow on the basis of our know-how and our technology platform.

I promise you this: in 2011, we will again develop innovative solutions for our customers—and set new standards in the markets, together with our partners.

Dr. Martin Komischke
CEO and Chairman of the Executive Board
HOERBIGER Holding AG
BITZER KÜHLMASCHINENBAU SCHKEUDITZ GMBH:
IT’S ALL ABOUT REFRIGERATION ...

Bystronic Maschinenbau Gmbh:
A MATTER OF FORM

Neuman & Esser Group:
COMMITTED TO TRADITION—FOCUSED ON THE FUTURE
Environmental Upgrade for old Engines

ENGINE SOLUTIONS PRESENTS ADVANCED ENGINE CONTROLLER (AEC)

With the Advanced Engine Controller (AEC), HOERBIGER Engine Solutions is presenting a first result from the collaboration with the JKU HOERBIGER Research Institute for Smart Actuators at the Johannes Kepler University of Linz, Austria.

The AEC is part of a new generation of sophisticated engine management units featuring comprehensive monitoring and diagnostic functions. Thanks to the combination of advanced control algorithms and fuel metering and charging measures, gas-fueled engines up to 60 years old can be revamped with the AEC to achieve additional years of operation. After the upgrade, they comply with all environmental requirements presently in effect. The improved control of the engine increases efficiency and minimizes emission of harmful substances.

"With the AEC, we have succeeded in closing the gap between the difficult conditions in the field and the latest control technology," said Dr. Peter Steirerück, Head of the Division Engine Solutions at HOERBIGER Compression Technology.

HOERBIGER Service North America in Denver, Colorado, Altronic LLC in Girard, Ohio, and HOERBIGER Control Systems AB, Amal, Sweden, all played major roles in developing the AEC. HOERBIGER Engineering Services, Houston, Texas, a Division of HOERBIGER Service North America, successfully conducted the initial field testing.

HOERBIGER and the Institute for Electrical Drives and Power Electronics at Johannes Kepler University of Linz have very successfully collaborated for a number of years. At the beginning of 2010, the HOERBIGER Foundation contributed money toward the founding of the JKU HOERBIGER Research Institute for Smart Actuators. The institute conducts basic and application research in the forward-thinking field of smart actuators, a key technology for the future projects of all Strategic Business Units and Business Divisions of HOERBIGER.
By April 2012, HOERBIGER will invest approximately 28 million euros in developing a new friction system manufacturing operation and in the production of selector sleeves for new transmission generations in Schongau, Germany. As early as 2012, synchronizers for approximately 900,000 transmissions are scheduled to be manufactured at the Martina-Hörbiger-Straße location; in 2013 and ensuing years, the volume will rise to one million units annually. The new project will create over 120 new jobs in Schongau. The reason behind the huge investment is a new order from GETRAG Group, Untergruppenbach, Germany, for the supply of complete synchronizers for the GETRAG DCT 250 PowerShift® transmission. The DCT 250 is an innovative dual-clutch transmission. It was developed as a technologically more sophisticated and more fuel-efficient alternative to the conventional torque converter transmission for vehicles in the mid-range and compact car segments.

“Jugend forscht”

RECORD PARTICIPATION AT COMPETITION

“Bringing a Breath of Fresh Air to Science” was the motto of the 2011 “Jugend forscht” / “Schüler experimentieren” competitions. A total of 91 young researchers participated with 52 projects in the competitions in the foothills of the Bavarian Alps. Seven junior scientists qualified for the state competitions in Würzburg and Dingolfing.

HOERBIGER at the MIOGE 2010

INNOVATIONS FOR THE OIL AND GAS INDUSTRY

From June 21 to 24, HOERBIGER will showcase innovations from the Strategic Business Units Compression Technology and Automation Technology at the Moscow International Oil & Gas Exhibition (MIOGE). MIOGE is the leading exhibition for the oil and gas industry in Russia. This year, more than 30,000 industry professionals from 36 countries are expected to visit MIOGE in Moscow. The new version of the RecipCOM compressor monitoring and protection system and the EHAS electrohydraulic valve actuator will be in the spotlight of the HOERBIGER trade show presentation. The Strategic Business Units Compression Technology and Automation Technology will be represented at the exhibition with a joint booth. “The MIOGE is an ideal platform for us to strengthen existing business relations and approach potential new customers,” said Dimitri Kafidov, Managing Director of HOERBIGER Ltd., Moscow.

Investment in the Millions in Schongau

HOERBIGER DRIVE TECHNOLOGY CREATES 122 NEW JOBS

By April 2012, HOERBIGER will invest approximately 28 million euros in developing a new friction system manufacturing operation and in the production of selector sleeves for new transmission generations in Schongau, Germany. As early as 2012, synchronizers for approximately 900,000 transmissions are scheduled to be manufactured at the Martina-Hörbiger-Straße location; in 2013 and ensuing years, the volume will rise to one million units annually. The new project will create over 120 new jobs in Schongau. The reason behind the huge investment is a new order from GETRAG Group, Untergruppenbach, Germany, for the supply of complete synchronizers for the GETRAG DCT 250 PowerShift® transmission. The DCT 250 is an innovative dual-clutch transmission. It was developed as a technologically more sophisticated and more fuel-efficient alternative to the conventional torque converter transmission for vehicles in the mid-range and compact car segments.

SHORTCUTS

NEW ADDRESS FOR HOERBIGER INDIA PVT. LTD.

Since the beginning of the year, HOERBIGER India Private Ltd. has a new address:

HOERBIGER India Private Limited
3rd Floor, Saffire Park Galleria
4, Pune-Mumbai Road, Wakdewadi
Shivajinagar, Pune 411 005
Phone +91 20 6605 4000
Fax +91 20 6605 4099
On January 30 of this year, Mercedes-Benz kicked off the F-CELL World Drive. Three B-Class fuel-cell-powered electric vehicles started out from Stuttgart, Germany, on a 125-day tour around the world. On a route covering almost 19,000 miles, the driver teams will cross four continents and 14 countries. Also on board is innovative technology from HOERBIGER: HOERBIGER Ventilwerke, Vienna, Austria, developed a pressure control valve (HPCV) that ensures precise metering of the hydrogen into the fuel cell system.

Mercedes-Benz F-CELL World Drive

CIRCLING THE GLOBE ON ELECTRIC POWER

On January 30 of this year, Mercedes-Benz kicked off the F-CELL World Drive. Three B-Class fuel-cell-powered electric vehicles started out from Stuttgart, Germany, on a 125-day tour around the world. On a route covering almost 19,000 miles, the driver teams will cross four continents and 14 countries. Also on board is innovative technology from HOERBIGER: HOERBIGER Ventilwerke, Vienna, Austria, developed a pressure control valve (HPCV) that ensures precise metering of the hydrogen into the fuel cell system.

With the F-CELL World Drive, Mercedes-Benz wants to underscore the technical maturity of the fuel cell technology of vehicles that are based on this alternative drive concept. At the heart of the B-Class F-CELL is the new generation of the electric drive system powered by fuel cells.

The fuel cell generates the electric power on board. No harmful emissions are produced, only pure water. The key drive components of the vehicles are located in the sandwich floor, where they are protected and require little space, leaving the interior and trunk fully usable. Safety is a top priority: the experience garnered over the years with the electric drive of the A-Class F-CELL as well as the high-voltage technology using lithium-ion batteries from the S 400 HYBRID are just some aspects that were incorporated in the safety concept of the B-Class F-CELL. Fuel cell vehicles from Mercedes-Benz can be used in underground garages, parking garages or tunnels without restrictions.

The B-Class F-CELL electric vehicles have a range of approximately 250 miles. If the hydrogen tanks are empty, they can be refilled in less than three minutes thanks to a standardized fueling system. As a result, fuel-cell-powered electric vehicles are able to make a contribution to local zero-emission mobility not only in densely populated areas, but also on long routes. Aside from their use in passenger cars, fuel cell drives are also suitable for other vehicle types, such as city buses for example.

In the B-Class F-CELL, a 100 kW (136 hp) electric motor assures driving pleasure and dynamics on a par with a 2.0-liter gasoline engine. The engine torque is 290 Nm and is available right from the very first revolution. In the New European Driving Cycle (NEDC), a B-Class F-CELL consumes the equivalent of only 3.3 liters of fuel (diesel equivalent) per 100 kilometers, equating to 71 mpg. The hydrogen pressure control valve from HOERBIGER plays a central role in bringing out the B-Class F-CELL’s driving dynamics. “The pressure regulator defines the vehicle dynamics. It must be able to vary the flow from maximum power to zero, and conversely, within a matter of milliseconds,” explains Dr. Gerhard Ranegger, Head of the Engine Solutions Business Unit at HOERBIGER Ventilwerke. To ensure the necessary metering precision over the entire operating range, HOERBIGER developers used two...
vals featuring different flow rates. The timing valves used have only two operating states: fully closed or fully open. The hydrogen is metered by the switching frequency and opening durations of the valves.

“A tricky challenge for the design engineers was the necessary cold-start capability. When the car is stationary, the nozzle tip may ice over. Still, the vehicle must be ready in a matter of seconds,” reports Dr. Ranegger. The elegant solution to the problem: a nozzle heater. At temperatures below freezing, the heater is activated as the vehicle is started to heat the nozzle tip. This solution ensures that the vehicles reliably start even at outside temperatures as low as minus 13 degrees Fahrenheit.

The acoustics in the vehicle posed another challenge for the HOERBIGER engineers. Every time the pressure control valve is switched, it generates noise, which is annoying to occupants of the vehicle. Special stop dampers and other sound insulation measures on the overall unit reduced the noise to a no longer perceptible sound level.

“Some 125 years after the invention of the motor car, for us the B-Class F-CELL embodies its reinvention,” explains Dr. Dieter Zetsche, Chairman of the Board of Management of Daimler AG, commenting on the significance of the innovative fuel cell vehicle. “As an event which is currently unique, this circumnavigation of the world in customer-ready fuel cell vehicles again demonstrates that we have sufficient pioneering spirit for at least another 125 years of innovation.”

The Mercedes-Benz B-Cell F-CELL has demonstrated its suitability for everyday driving since as early as October 2010. Last year, Mercedes-Benz delivered the first of around 70 electric vehicles with fuel cells to a representative client base of fleet operators, public institutions, public figures, and private customers in the state of California, USA. In 2011, six vehicles were provided to the German Federal Ministry of Transport and select companies in German industry. In total, Daimler AG plans to launch approximately 90 vehicles on the German market by 2012. Worldwide, customers are scheduled to operate approximately 200 electric vehicles by 2012. The ambitious goal on the horizon is one million electric vehicles on the roads of Germany by 2020, which from today’s perspective equates to a market share of about two percent.
SINDELFINGEN, GERMANY: Whether frozen pizza on supermarket shelves, freezing tuna on the high sea, the reliable storage of blood plasma, or the air-conditioning of buildings, processes or buses is at stake—BITZER SE, a worldwide leading manufacturer of compressors for refrigeration and air-conditioning systems, ensures the right temperature. HOERBIGER has supplied components to BITZER since 1967. According to BITZER CEO Senator Peter Schaufler, over the years the modest beginnings have evolved into a business relationship that is based on trust and partnership. Today, HOERBIGER supports the company as a system supplier on its global growth track and is involved in the development of innovations right from the start. (Page 16)
SiNdelfingen, Germany: Whether frozen pizza on supermarket shelves, freezing tuna on the high sea, the reliable storage of blood plasma, or the air-conditioning of buildings, processes or buses is at stake—Bitzer SE, a worldwide leading manufacturer of compressors for refrigeration and air-conditioning systems, ensures the right temperature. Hoerbiger has supplied components to Bitzer since 1967. According to Bitzer CEO Senator Peter Schaufele, over the years the modest beginnings have evolved into a business relationship that is based on trust and partnership. Today, Hoerbiger supports the company as a system supplier on its global growth track and is involved in the development of innovations right from the start.
GOTHA, GERMANY: High-end technology for the air and down-to-earth classical design: The application spectrum of machine tools is broad. Bystronic Maschinenbau GmbH in Gotha, Germany, has manufactured press brakes since 1872. It’s all a matter of form … Managing Director Sven Künkels relies on the know-how of HOERBIGER. (Page 22)
Gotha, Germany: high-end technology for the air and down-to-earth classical design: the application spectrum of machine tools is broad. Bystronic Maschinenbau Gmbh in Gotha, Germany, has manufactured press brakes since 1872. It’s all a matter of form … Managing director Sven Künkels relies on the know-how of Hoerbiger. (page 22)
ÜBACh-paleNBerG, GErMaNY: Neuman & ESSER Aachen—NEA. The production site which, despite moving in 1972 to Übach-Palenberg, to this day carries with pride the name of the imperial city, Aachen, is rated worldwide as the premium brand for reciprocating compressors in the process gas industry. In 2007, siblings Stefanie and Alexander Peters took over the management of the company from their father and continued the tradition in the 4th generation. (Page 30)
GERMANY [50° 54' N, 6° 8' E]
In the halls of BITZER Kühlmaschinenbau Schkeuditz GmbH, everything revolves around refrigeration: BITZER is one of the largest manufacturers of reciprocating compressors worldwide. These compressors are the driving force behind refrigeration equipment—or as they say at BITZER “the heart of every refrigeration and air-conditioning system.”

TEXT: Daniel Hautmann - PHOTOS: Manfred Klimek
ompressors used in refrigeration applications take in gaseous refrigerant at low pressure and compress it on a higher pressure level. From the compressor, the gas flows into a condenser, where the refrigerant is condensed at ambient temperature, releasing heat to the surroundings. The gas is expanded by a restrictor element (mainly expansion valves) and can take up heat in the evaporator (heat exchanger) at a low temperature level. Afterwards, the gas is taken in by the compressor—and the cycle restarts.

Cooling capacity that is provided at any time, in the required quantity and at the right temperature has become indispensable in our modern society. The cool beer in the evening, the complete refrigerated transport of our foods from refrigeration containers at sea, to storage in a central warehouse, all the way to the distribution and delivery to the supermarket requires modern refrigeration technology. Air-conditioned city buses and motor coaches, buildings, or computer centers improve our comfort level and the productivity. Today, a large number of production and development processes are only possible through the deliberate use of refrigeration technology. In most cases, the cooling capacity is generated by the cooling process described above, involving the continuous use of compressors.

A huge part of these compressors comes from BITZER, one of the global market leaders. The company has been considered a refrigeration and air-conditioning specialist since 1934. In addition to reciprocating compressors, BITZER also manufactures and supplies screw and scroll compressors as well as pressure vessels and condensing units all around the world.

The Production Process of Reciprocating Compressors
The BITZER plant in Schkeuditz, where the reciprocating compressors are manufactured, has over 183,000 square feet of production space, directly adjoining the International Leipzig/Halle Airport. Since acquiring the premises in 1991, BITZER has invested approximately 60 million euros—primarily in state-of-the-art CNC machines and flexible manufacturing systems.

BITZER produces the majority of the compressor components—housings, connecting rods, and shafts—in-house. One exception is the reed valves, which are the key for the efficient operation of the compressor. These are supplied by HOERBIGER Kompressortechnik GmbH in Schongau.

There are housings for two-, four-, six- or eight-cylinder compressors. While the two-cylinder compressors are not much larger than a motorcycle engine, the eight-cylinder models are reminiscent of full-blown passenger car engines. Grey cast and aluminum cast housings are machined. Due to their light weight, compressors featuring aluminum housings are used primarily for buses, trucks or vessels. Compressors equipped with grey cast iron housings are generally used in stationary applications, such as in supermarket systems, fresh-produce cases, and refrigerating chambers.

In both cases, the housings are first machined on four-axis horizontal machining centers. The facility boasts these machines by the dozen. BITZER employees transport the housings by crane to their machines, where they clamp them on the work tables. The doors of the machining chambers close at the push of a button. Immediately, the spindles start their high-speed work. Metal shavings are twisted into long, shiny curls. Here, the cylinder liners are turned out, threads are drilled, end faces are milled, and fitted holes are bored.

While the machines are running, the operators prepare the next housing for the machining operation. Elsewhere, employees use measuring
The reed valves from HOERBIGER are installed in the compressor. The demands on the valves are crucial component of a compressor. Every valve is designed exactly for a specific compressor type,” says Lothar Kern, Reed Valve Product Manager at HOERBIGER Kompressortechnik in Schongau. Every year, HOERBIGER delivers approximately 600,000 reed valves to BITZER’s plants around the world.

www.hoerbiger.com

PART

The valve plates used at BITZER in Schkeuditz are supplied by HOERBIGER Kompressortechnik GmbH in Schongau, Germany. The precision components consist of the machined and ground seat plate with spherically embossed valve seats, the intake, pressure and spring disks made of spring band steel, and the gas-nitried pressure stroke limiters. The valves are subject to especially high demands because they must function maintenance-free, and virtually wear-free, for millions of cycles. In order to ensure this, all components must be manufactured consistently within the narrow specified tolerances, and after assembly all valves must undergo leak testing. The efficient operation of the reciprocating compressor is due in no small part to the valve. This makes it one of the performance-defining components of the reciprocating compressor. “The valve is a

PART OF

BITZER Kühlmaschinenbau GmbH was founded by Martin Bitzer in 1934. Today, the company is owned entirely by Peter Schaufler. BITZER employs over 2,700 people in 32 locations worldwide. It is headquartered in Sindelfingen near Stuttgart, Germany. The Schkeuditz site has been part of
must cope with several million load cycles. To ensure efficient operation, the valves must be highly leak-proof and virtually wear-free.

After all the components are mounted, the compressors still have to pass a number of tests before delivery, such as the high-voltage, leak or strength test.

These tests are part of international or BITZER-internal standards and regulations.

The pressure levels at which the compressors are operated range from 28 bar to 45 bar for conventional refrigerants, such as HCFC or hydrocarbons, and up to 160 bar for compressors for transcritical CO₂ applications. The test pressures used in the production tests correspond to 1.1 to 1.3 times the maximum operating pressure.

Yet, even passing these tests with flying colors this does not mean the green light for shipping the compressors. They still must undergo the functional test. Here, all key functions as well as the performance of the compressor are tested.

Only then, and after meticulously documenting everything, the compressors will receive their final look: several coats of the traditional BITZER green paint. The hue has been synonymous with top quality for decades.

BITZER since 1991. The BITZER Group is the largest independent manufacturer of refrigerant compressors. BITZER is represented around the world with distribution companies and production facilities for reciprocating, screw, and scroll compressors, condensing units, as well as pressure vessels.

www.bitzer.de

PARTNERSHIP

BITZER and HOERBIGER have successfully worked together since 1967. The conceptual planning, design, and production of reed valves are generally carried out in a close development partnership with the customer. This is the key for creating a homogeneous compressor-valve unit.
BITZER, a worldwide leading manufacturer of compressors for refrigeration and air-conditioning systems, and HOERBIGER have had close ties since 1967. Their business relationship began with the search for a new supplier for valve plates. The company decided in favor of HOERBIGER. From its modest beginnings, HOERBIGER has evolved into a system supplier for reed valves for BITZER.

The first drawings stem from the year 1967. Since then, BITZER has included HOERBIGER in all reciprocating compressor developments due to its portfolio.

**HOERBIGER@MOTION: How are BITZER and HOERBIGER working together today?**

**Jürgen Kleiner:** The business relationship between BITZER and HOERBIGER is based on a spirit of partnership and trust. Both companies are globally positioned today. In addition to Germany, BITZER is present in Portugal, China, the USA, and Brazil with compressor manufacturing sites of its own.

The business relationship and the global presence of BITZER and HOERBIGER have repeatedly led to new, global, and above all joint activities.
**HoeRBiger@Motion:** What is BITZER’s current positioning in the market?

**Jürgen Kleiner:** Because of continuous innovations in reciprocating, screw, and scroll compressors, BITZER has succeeded over the last few years not only in maintaining, but in continually expanding the market leadership in the majority of technologies it represents. Currently, BITZER SE is the largest independent manufacturer of refrigeration compressors in the world.

**HoeRBiger@Motion:** What criteria are crucial for the future of BITZER?

**Jürgen Kleiner:** With the enhancement of our reciprocating compressors for CO₂ applications and the expansion of the series by suction gas-cooled frequency converters, we have recently unveiled trailblazing product novelties.

The future will continue to be shaped by a high sense of responsibility for the environment and by even greater importance of energy savings and sustainability in the development work of our products.

**Hans P. Meurer:** Continuously rising environmental requirements as well as the need for cost reductions have prompted us for quite some time to work intensively on products that, in terms of their basic design, allow energy-efficient cooling and air-conditioning and, consequently, a decrease in carbon dioxide emissions. After all, 14 percent of CO₂ emissions in the Federal Republic of Germany are related to refrigeration and air-conditioning systems.

For us, specifically this means building compressors that are excellently suited for partial-load operation and adapting the cooling capacity that is generated to the actual demand. In addition to improving the system efficiency, this also improves the control accuracy/quality.

**HoeRBiger@Motion:** How can HOERBIGER support BITZER’s global growth?

**Jürgen Kleiner:** As a system supplier, HOERBIGER is our valve plates expert. We consider HOERBIGER to be a partner for our development. Through early supplier involvement, we reduce the costs and, together, make a contribution to shortening the development times. One example is the development project for a new reciprocating compressor launched at the end of 2009. HOERBIGER has been involved in this project right from the start by developing new reed valves.

**HoeRBiger@Motion:** What role does Asia play for the vision of BITZER’s future?

**Hans P. Meurer:** If I could turn the clock three years ahead, I would say that, in the near future, the Europe/EMEA and Asia blocks will be equivalent to each other in terms of sales.

**HoeRBiger@Motion:** How will you cover this demand?

**Hans P. Meurer:** BITZER holds an absolutely leading position, both globally and regionally. In Asia, our most important market is China, followed by Korea. Presently, 95 percent of what we produce in our Beijing plant is sold in China. We cover another part of our Asian activities with our European production operations.

**HoeRBiger@Motion:** Does HOERBIGER also support you in China?

**Jürgen Kleiner:** Yes, and we are very grateful for this. We produce almost our entire product range in Beijing: reciprocating compressors, screw compressors, and aluminum compressors. As a result, it has been fundamentally important to us that HOERBIGER has established the reed valve production operation in Changzhou.
Press brakes—that sounds like mechanical engineering, using old-fashioned technology and blacksmithing: “hard but hearty”. In fact, metal-forming machines have been produced continuously in Gotha since 1872. However, over the decades they have been transformed from simple mechanical tube-bending machines to computer-controlled high-precision presses. These high-tech machines give shape to airplanes and lamp posts. HOERBIGER hydraulic drive technology provides the power required for precise bending moments.

TEXT: Nikolaus Fecht · PHOTOS: Manfred Klimek
People don’t travel just to see or hear one thing. These words by Johann Wolfgang von Goethe, privy counselor and Germany’s greatest poet, greet travelers at the train station in Gotha, the fifth-largest city in the Free State of Thuringia. There is a lot to see and learn about in the former capital and royal seat of the Duchy of Saxe-Gotha. Among other things, the German insurance industry was founded here. In competition with its artistically-oriented neighbor, Weimar, Gotha developed into a center for the sciences and boasted a natural history museum and astronomical observatory early on.

From Goethe’s Gotha ...

Goethe was not the only one attracted to the city; its scientific spirit inspired the founding of numerous metalworking businesses, such as Gothaer Waggonfabrik, which initially built railway cars, Gothaer Fahrzeugtechnik, another vehicle manufacturer, and the “Carl Grübel Spezialfabrik für Rohrbiegmaschinen,” which produced heavy machinery. After the Second World War, Grübel’s factory was expropriated, dismantled and integrated into a state combine under the East German government, then finally privatized once again. One guiding principle, however, kept the firm alive during its over 100-year history. Operating now under the name Bystronic Maschinenbau GmbH, the company continues to build high-quality metal-forming equipment. Nowadays the production of press brakes is a hightech process. This is reflected not only by the machinery in the new production hall, but also by the structure and qualification profile of the personnel. About every fourth employee of the approximately 200 employees of Bystronic Maschinenbau GmbH holds a university degree. Ten percent of the workforce is engaged in design and development. In addition, the company relies on “home-grown” talent. “We place great value on training and education,” states Managing Director Sven Künkels. “In 2011 we will again take on 30 young apprentices.”

... to a global player

The market for press brakes is tough but not complex, at least for quality machines. The four leading internationally active competitors come from Germany, Belgium and Japan. “We stand apart from the competition by providing individual solutions on a series basis,” Managing Director Künkels explains. “Our customer can put together his machine using a catalog of features.” Further, Bystronic offers a comprehensive range: starting with a very small press (capacity: 600 kilonewtons, corresponding approximately to a mass of 60 tons), to very large equipment (35,000 kilonewtons) for bending lengths from about 6 to over 60 feet.
“Our company invests a lot of money in development,” Künkels states. “Thanks to the enormous R&D expenditure, we build the most precise machinery and consequently consider ourselves a market leader.”

An additional unique selling proposition of Bystronic Maschinenbau GmbH is the high level of vertical integration. This is in part a historical holdover. Further, Bystronic also develops large parts of the electronics and software under its own auspices. Key components are produced on modern equipment, much of it is Bystronic machinery.

Investing during the Crisis

Looking ahead to continued market recovery, Bystronic—despite the financial crisis—has expanded its capacity. In Gotha, the company can produce up to 700 presses a year. Highlights of the more recent past include development for the airplane manufacturer Airbus. The high-end solution consists of two press brakes with two robots that automatically and economically give highly-precise form to the very large airplane components. According to Künkels: “There is only one machine like this in the world, and it’s at Airbus.”

XXL-format systems are among the specialties at Gotha. For the British manufacturer Berkeley, Bystronic created a tandem system for fully-automatic bending of 65-foot long lamp posts; the inauguration of the system was attended by Anthony Charles Lynton “Tony” Blair, then Prime Minister of Great Britain.

This segment of industry is very conservative and relies upon dependability and quality. In principle, there are no limits to bending technology originating in Gotha. Only rarely will Bystronic turn down an order. “We received an inquiry from Saudi Arabia to build a press for deployment in the desert,” says Managing Director Künkels. “I decided against the project, since the technical risks were simply too great.”

Hydraulic Key Components

Drive technology plays an important role in the performance of press brakes. Traditionally Bystronic has relied on hydraulic power. Formerly, the required systems were developed and manufactured under its own direction. Now Bystronic obtains these key components from an outside provider, HOERBIGER Automatisierungstechnik GmbH in Altenstadt, Germany. Martin Rauwolf, Head of Sales for the Machine Tool Division at HOERBIGER: “Working with Bystronic, we have grown from a simple component supplier to a significant partner for the entire hydraulic system. Today we are involved right from the start in new developments.”

Few Top Suppliers

Suppliers such as HOERBIGER, providing leadingedge solutions for driving and controlling press brakes, are becoming increasingly important to Bystronic as a high-end manufacturer. They don’t have to be just very good; they have to respond quickly to customer needs. According to Sven Künkels, “A machine planned today has to be introduced at a trade show no later than two years from now.” The result: about 60 percent of the company’s purchasing volume is distributed among only 20 top suppliers.

“Our suppliers provide not only good price-performance ratios,” Managing Director Künkels adds. “We also stress mutual empathy. What help is a technically proficient supplier who doesn’t have a feel for our business?” Bystronic’s definition of “empathy” is based on the values of the Swiss Bystronic Group, focusing on commitment, innovation and openness. “If a supplier is not a good fit with us and our values,” says Künkels, “then we must part ways. HOERBIGER reflects the values we consider important for a long-term partnership. Therefore we shall surely continue to do business with HOERBIGER.”
PART

HOERBIGER supplies Bystronic Maschinenbau GmbH in Gotha with the hydraulic key components, in particular cylinder and pump control blocks, and anticavitation valves as well as hydraulic tool clamping systems for all CNC press brakes.

www.hoerbiger.com

PART OF

In 1872 Carl Grübel founded a special factory for tube bending machines using the “Rundus” trademark. Since 1916, under various ownership and conditions, the long-standing company has been continuously producing metal-forming machinery. After expropriation and dismantling (1948), restart in the German Democratic Republic (1950s), integration into the “Forming Technology Combine” (1970) and privatization (1990), the company was acquired in 2002 by the Bystronic Group headquartered in Niederönz, Switzerland (2009: about 1,400 employees, sales: 356 million Swiss francs). Within the Bystronic portfolio, the facility in Thuringia, Germany, is responsible for the development and production of press brakes of the Xpert and Hämmerle 3P product series. Like the Hämmerle 3P, Xpert system rank among the leading-edge products in the entire market. In Tianjin, China, Bystronic has a development and production plant for mid-range press brakes. The laser cutting system business forms the backbone of the Bystronic Group. The Division Waterjet, which develops, produces, and sells waterjet cutting systems, rounds out the Bystronic portfolio.

www.bystronic.com

PARTNERSHIP

HOERBIGER Automatisierungstechnik GmbH in Altenstadt is a worldwide leader of hydraulic systems and piezotechnology in machinery construction. Working with Bystronic Maschinenbau GmbH in Gotha, the company has joined in a long-term partnership that started with supplying hydraulic systems, which today includes joint development activities. HOERBIGER Automatisierungstechnik GmbH is a specialist in key components for machine tools and control valves.

www.hoerbiger.com

Sven Künkels, Managing Director of Bystronic Maschinenbau GmbH, Gotha: “Our values focus on commitment, innovation and openness. HOERBIGER reflects the values we consider important for a long-term partnership. Therefore we shall surely continue to do business with HOERBIGER.”
The Strategic Business Unit Automation Technology in the HOERBIGER Group has reorganized. New structures will bring business unit CEO Norbert Gauß and his team closer to the customer.

HOERBIGER Automation Technology is off to a good start in 2011. Since August 2010, management and employees in all locations and functional areas have been working on repositioning the Strategic Business Unit. Step by step the @ne AT Initiative will bring the approximately 350 employees of HOERBIGER Automation Technology closer together.

When it comes to technology and innovation, in addition to performance increases, topics such as simplicity, energy efficiency and safety will be in the forefront. “Our challenge is the ingenuity of simplicity, not complexity,” said Norbert Gauß, CEO of the Strategic Business Unit. “We will develop solutions which are simple for the customers to integrate into their individual applications. Of course, this will continue to include unique selling propositions that will provide the customer with a competitive advantage. The HOERBIGER brand has always stood for this, and will continue to do so in the future.”

Closeness to Customers is a top Priority
The Altenstadt and Barbing locations in Germany will become Centers of Competence with integrated production. This structure will be supplemented with an Application Technology Center and Segment Management that is close to the customer in terms of the distribution structures. With dedicated sales organizations in Stuttgart as well as in the Cologne/Düsseldorf region, HOERBIGER Automation Technology in the future will have short distances to key customers in the mechanical and plant engineering industry as well as the process industry.

“Our customers will benefit from the repositioned HOERBIGER Automation Technology organization,” said Norbert Gauß. “To be closer to the customer, we are not only repositioning ourselves geographically. As part of the @ne AT initiative, we
“We will develop solutions which are simple for the customers to integrate into their individual applications. Of course, this will include unique selling propositions that will provide the customer with a competitive advantage. The HOERBIGER brand has always stood for this, and will continue to do so in the future.”
Norbert Gauß, business unit CEO

MARKETS OF THE FUTURE

have also reorganized our existing historically grounded structural organization and positioned ourselves for the future.”

Against this background, in the future the business activities of HOERBIGER Automation Technology will be assigned to three new, strategically oriented Divisions: Machine Tools, Valve Automation and Multimarket.

Greater Productivity for Machine Tools
In the industrial business, the focal point in machine tools formerly was hydraulics components and systems for premium press brakes. The technological edge from HOERBIGER allowed OEM customers to achieve considerable competitive advantage with respect to precision and efficiency. In the future, HOERBIGER Automation Technology intends to also contribute to productivity increases in other machine tool: “Our customers require competence in bending, pressing, stamping and laser cutting. Our components and systems will also contribute to improving the precision, reliability and efficiency of machine tools in these market segments,” Norbert Gauß added.

In the medium and long term, Norbert Gauß sees growth potential in other mechanical engineering segments beyond metal working for HOERBIGER Automation Technology. Manufacturers of polymer processing equipment in particular could benefit from the know-how of the Strategic Business Unit. “Our technology can be interesting for numerous companies in these areas.”

Simple and compact Valve Actuators
As a supplier of components, systems, and services for reciprocating compressors, the HOERBIGER Group is a long-time partner of the oil, gas, and process industries. In the future, the process industry will benefit more than ever from new developments by HOERBIGER Automation Technology.

In the process industry, safety and reliability come first. Electrohydraulic valve actuators developed by HOERBIGER Automation Technology set new standards for valve automation. “Our customers require solutions that are easy to install, have a compact design and are one hundred percent reliable,” Norbert Gauß says.

The development of innovative solutions for the process industry depends upon reliability and a high level of technical maturity. Norbert Gauß:

“We will utilize the considerable experience of HOERBIGER Compression Technology in the process industry to achieve new synergies for our customers in international process industry with technologies from the Strategic Business Unit Automation Technology.”

The ability of HOERBIGER Automation Technology to draw on the worldwide resources of the HOERBIGER Group is an advantage that both global and local customers can enjoy in equal measure.

Multimarket: Proven Technology for new Markets
In addition to components and systems for machine tools and valves, the portfolio of HOERBIGER Automation Technology also includes components for numerous smaller but technologically very demanding niche markets.

HOERBIGER piezo valves control the airflow of ventilators for newborns, provide the movement of rows of seats in 3D movie theaters or regulate pilots’ pressure suits. HOERBIGER hydraulic systems are used not only in machine tools, but are also employed in hydraulic parking brakes of rail vehicles and wind energy systems as well as industrial tensioning and clamping devices.

Additional HOERBIGER specialties include power window lifts for armored security vehicles as well as steering and trim systems for motor boats and watercraft.

In the future, the Multimarket Division will provide individual support for customers in these diverse markets—with a dedicated team of employees that will apply the resources of development, production, and sales to examine the particular customer requirements in detail.

In most instances, the technical modifications required to adapt proven technology from the existing portfolio to the specific applications of the customers in the Multimarket area are minor: 80 percent of a new solution comes from the modular system, 20 percent is individual adaptation of the application engineering to the customer. “A large number of users of hydraulics and pneumatics components are looking for such safe and reliable standard solutions,” said Norbert Gauß. “With our future business model, we can offer these customers not only sound co-engineering that is based on our experience, but also cost benefits because of extensive standardization.”
At the Otto Bock Science Center of Medical Technology, seemingly ordinary activities such as walking or gripping are presented in surprising and exciting ways. Within the meaning of bionics, knowledge of natural mobility forms the basis for technical solutions that help to restore mobility. Visitors of the Otto Bock Science Center of Medical Technology can personally try out and literally experience themselves how such products function and what they mean for handicapped persons. A very special highlight, which is the only one of its kind worldwide, is the wheelchair simulator. It realistically simulates maneuvering across a virtual obstacle course on the Pariser Platz in Berlin in a wheelchair. The wheelchair is installed on a rocker, and the rocker’s movements are synchronized with the route. During the simulation, the person feels the impact.

How do people with limited mobility perceive their environment? How does a wheelchair user feel in a big city crowd? You can experience this and more at the Otto Bock Science Center of Medical Technology in Berlin, Germany. One of the attractions of the medical technology exhibition, which is one-of-a-kind worldwide in this form, is a simulator that allows visitors to recreate how wheelchair users perceive everyday life. Three piezo proportional pressure regulators from HOERBIGER Automatisierungstechnik GmbH ensure the simulation of authentic movements of the wheelchair, for example when an obstacle such as a curb is encountered.

TEXT: Ludwig Schönefeld - PHOTOS: Otto Bock HealthCare GmbH
PART
Piezo proportional pressure valves of the tecno plus product family from HOERBIGER are used in applications that require extremely short response times and maximum control precision. Their three key components are control electronics, the piezo control unit, and a pneumatic pressure intensifier with integrated pressure sensor. The pressure sensor measures the current output pressure at the pneumatic master valve. The integrated electronic controller compares the sensor signal to the electric target value and then precisely regulates the output pressure to the specific target value. Compared to alternative control technologies, the operation of piezo proportional pressure valves from HOERBIGER is extremely efficient. Valve throughputs of up to 1,600 liters per minute are easily attained. Precise control of these air volumes is achieved by a 24-volt low-voltage system using only 0.8 watts of power.

Due to the low power consumption, the tecno plus valve develops very little specific heat. It is suited particularly well for extremely constrained installation spaces, in which heat is difficult to dissipate. For this reason, piezo proportional pressure valves from HOERBIGER are used not only in mechanical engineering, but in numerous technological niches in which the combination of high power, low consumption, and low waste heat are especially critical. A typical field of application is medical technology. The use of HOERBIGER piezo proportional pressure valves in a wheelchair simulator is less typical, but more spectacular.

PART OF
For over 90 years, the name Otto Bock has stood for innovations and entrepreneurial success. With pioneering spirit, courage and well-developed decision-making skills, Otto Bock founded Orthopädische Industrie GmbH in 1919 in Berlin. Today, Otto Bock HealthCare GmbH is a world market leader in the prosthetics field and additionally offers a wide range of products in orthotics, mobility solutions, and neurostimulation. Approximately 4,200 employees generated annual sales of approximately 500 million euros. The central office in Duderstadt, Germany, also coordinates the business activities of the foreign subsidiaries in 40 countries around the globe.

www.otto-bock.de

Focus on People
The aspiration with which the Otto Bock Science Center of Medical Technology was designed also reflects the company’s focus on people. Even the design of the facade of Otto Bock HealthCare GmbH’s presence in the capital city in direct vicinity to the Potsdamer Platz is spectacular. Its structure replicates human muscle fibers. When darkness falls, the “Walker” laser installation on the facade becomes a discreet eye-catcher. The team of the Berlin architectural firm Gnädinger Architekten designed the fascinating building. “The organic-dynamic configuration of the six-story building is based on the principles of nature—as a model for harmony between technology and man,” says Project Manager Christoph Claus. “The facade bands replicate the structure of muscle fibers that softly envelop the building. The gentle appearance, combined with the unique lighting effects of the facade, signals an open, friendly, and easily accessible institution and also contributes to building the corporate image.” On the first three levels, a medical technology exhibition area featuring multimedia and interactive installations invites visitors on a discovery tour. Three additional floors offer space for meetings and seminars of Otto Bock Academy.

www.hoerbiger.com

realistic movement
People who are dependent on this device in everyday life learn to circumvent obstacles and put themselves in the place of a person of different ground conditions and angles of inclination up close. People learn to circumvent obstacles and put themselves in the place of a person who is dependent on this device in everyday life.

Sensitivity and accuracy are requirements to which the developers of Otto Bock HealthCare GmbH have always felt committed when developing new and innovative technical devices for handicapped persons. “Our activities are geared to the person. Our goal is to improve the quality of life for handicapped people. In prosthetics, this means replacing missing body parts with the most functional prostheses possible. Analogously, orthoses permanently or temporarily support limited body functions, either therapeutically or prophylactically,” says Prof. Hans Georg Näder, Chairman and CEO of Otto Bock HealthCare GmbH.

www.sciencecenter-medizintechnik.de
NEUMAN & ESSER GROUP

Committed to Tradition—Focused on the Future

NEUMAN & ESSER has been the leader in reciprocating compressor technology for over 100 years. The company’s most important customers have operations in the refinery business, in the petrochemical and chemical industries, and natural gas applications. For their requirements, a flexible product portfolio featuring compressors in a wide range of sizes and designs is available for solutions that are tailored to the customers needs. Compressors with 100,000 Nm³/h volume flow, 30,000 kilowatt driving power and 1,000 bar discharge pressure form the parameters of the performance spectrum.

To combine tradition and the future has always been the maxim guiding the actions of NEUMAN & ESSER management. In 1891, Oscar Peters, the youngest son of a Eupen cloth manufacturer, took over the J.L. Neuman & Cie. machine factory founded in 1830 in Aachen and named Neuman & Esser Aachen—“NEA”—in 1844. Since that time, the company has been owned by the Peters family.

The original portfolio—hydraulic presses, rolling steaming presses, oscillating steam engines and shearing machines—was expanded around 1900 to include piston steam engines, compressors as well as vacuum and liquid pumps. Slow-running reciprocating compressors for applications in mining and in the process gas industry gradually developed into the strongest area of operation.

The Face of the Family
In 2007, the siblings Stefanie Peters and Alexander Peters took over the management from Klaus Peters, who transitioned to the advisory board. The graduate of business administration and the industrial engineer have since been responsible for all of the company decisions. “It is especially important for us”, states Stefanie Peters, “to be the face of the family to our 850 employees and to represent the family’s values from the family circle in the interest of the shareholders.”
The transition from the third to the fourth generation is an example of the continuity with which NEUMAN & ESSER is managed: “Our strength is the reliance on the fact that we can make decisions which are geared toward the medium and long term,” explains Stefanie Peters.

Passing the baton from the father to the following generation was also prepared in advance. Alexander Peters: “We have many long-standing and experienced employees. They all had time to adjust to the next generation taking over.”

Reliability and Technological Leadership
Reciprocating compressors hold a key position in the refinery process: they must function reliably 24 hours a day, seven days a week, 365 days a year. Absolute reliability is therefore the highest maxim of the NEA corporate philosophy—flanked by quality, flexibility and fairness towards customers and peers. Every employee contributes to achieving the company’s goals.

This philosophy is sustained by an intensive cultivation of an international corporate culture, which is supported by openness and respect for the achievement of others.

Just as important as reliability is technological leadership: it has always been the performance goal of the NEA brand to be one step ahead of the competition.

With a staff of ten, the Central Division of Technology, the central department for research and development, spurs on developments independent of projects in order to constantly advance the existing portfolio—culminating in completely new developments in the context of product innovations.

“We are able to maintain our leading market position only if our partners also support this goal of technological leadership,” states Alexander.
A business partner who has helped to carry forward NEUMAN & ESSER’s advances in technology for years is HOERBIGER Compression Technology.

HOERBIGER Valve Technology
Compressor valves are—apart from unfinished castings and forgings—the only key component of NEA compressors which NEUMAN & ESSER does not manufacture in-house. During operation, they are the most sensitive component of the compressor. The design and functionality of the valves crucially determine the reliability of the compressor.

“For components we don’t manufacture in-house we need partners who are among the best”, explains Alexander Peters. “We consider ourselves leaders in technology for reciprocating compressors with very individual equipment that is tailored to the requirements of the customer, where even the valves are ‘tailor-made.’ The collaboration with HOERBIGER, which began in the 1950’s, is a relationship built on trust, upon which we rely to this day.”

Especially important for long-term collaboration is the continual technological advancement of valve technology: “We greatly appreciate that HOERBIGER invests so much to enhance the classic compressor valve.” A decisive factor for NEUMAN & ESSER are technological innovations that increase the service life and reduce the failure rate: “The best machines can only be built with the best suppliers. We must uphold our requirements for quality ‘Made in Germany’ and therefore continually advance our own technology to withstand the competitive pressure, which is certainly not going to decrease.”

HydroCOM Pioneer
Today, this performance goal no longer only applies to the classic compressor valve. At the end of the 90’s, NEUMAN & ESSER was the first manufacturer to equip its compressors with the electrohydraulic HydroCOM control system developed by HOERBIGER. The first machines were delivered as early as during the development phase: “We were the pioneer who had the courage back then to launch this innovative system,” says Alexander Peters. The HOERBIGER HydroCOM control system is based on the dynamic pressure control principle. It has the advantage that the machine can be controlled significantly more efficiently than with other control systems.

In the following years, NEA compressors made a significant contribution to the worldwide distribution of the HydroCOM system, with large quantities not only in Europe, but in key markets such as the USA, Brazil, China, and India. “We consider this a win-win situation for HOERBIGER and NEA,” states Alexander Peters.

Entrepreneurial Foresight
When it comes to compressors, the NEA brand name is not only synonymous with technology, but also quality. This is due, to a large extent, to the specialization and the training of the skilled employees at the three German production locations.

NEUMAN & ESSER benefits from employees who, across generations, develop core knowledge at the locations in Germany, initiate improvement processes, and conduct research and development. A further aspect is the geographical proximity to and close relationship with RWTH Aachen, one of the leading universities for young engineering talent in Germany. Stefanie Peters: “This environment shaped by technology is just as much of a locational advantage for us as the infrastructure of the Euregio.”

Substantial expenditures for training and continuing education—the apprentice rate of NEA is currently 16%—as well as for equipment have always shown the entrepreneurial foresight of the Peters family. A new portal milling machine recently placed into operation as well as the introduction of 3D measurement technology in production are a reflection of future-oriented investment activity.

Together towards new Goals
Following the decades-long successful collaboration in compressor valves and the joint pioneering achievement in connection with the dynamic pressure control of compressors with the HOERBIGER HydroCOM system, both companies already have a further goal: “We are quite certain that we can offer our customers lasting added value with the RecipCOM monitoring system developed by HOERBIGER,” says Alexander Peters. “This is why NEA will be wholeheartedly offering this system from HOERBIGER to a greater extent on the market in the future.”

Several weeks go by from the assembly to the test run of the compressor. The goal of achieving reliability in the operation of the machine in later use also...
The collaboration between NEUMAN & ESSER and HOERBIGER began with the delivery of steel plate valves. Today, numerous compressors built at NEUMAN & ESSER are equipped with valves from HOERBIGER. Beyond this, up to 20 of the large compressors built every year are fitted with a HOERBIGER HydroCOM system, which regulates the capacity of the compressor by actively influencing the closing of the anti-cavitation valves. Moreover, NEUMAN & ESSER is trying to introduce the RecipCOM monitoring system on the market for new equipment. The system enables continuous condition monitoring of all critical compressor components, and if necessary, additionally provides reliable machine safety cut to within seconds.

www.hoerbiger.com

PART OF
The NEUMAN & ESSER GROUP (NEA) is a worldwide leading manufacturer of reciprocating compressors for refineries, petrochemistry, the chemical industry and for natural gas applications. In addition, NEA compressors are used in air separation as well as in the steel industry. Originating from the group headquarters in Übach-Palenberg in Germany, NEUMAN & ESSER operates 19 companies at 10 international locations. Worldwide, the group has approximately 850 employees.

www.neuman-esser.com

PARTNERSHIP
For 50 years, the NEUMAN & ESSER GROUP and HOERBIGER have been associated with each other: HOERBIGER Ventilwerke in Vienna, Austria, established itself as a premium supplier for compressor valves for the traditional company in Aachen over this very long collaboration. Especially for difficult applications, the specialists from both companies exchange information with each other when particular approaches are required.

www.hoerbiger.com
Latin America is changing: the Peruvian writer Mario Vargas Llosa was awarded the Nobel Prize in Literature 2010; in the same year Argentina was the Guest of Honor of the international Frankfurt Book Fair; and Brazil will host the 2014 FIFA World Cup and the 2016 Summer Olympics. These are just some of the highlights that recently threw Latin America into the international limelight—and not by accident.

TEXT: Tim Wohlfarth · PHOTOS: Mikko Crouch

Wellhead-compressors during operation. The natural gas deposits of Latin America play a major role in the future of the region. Investments in the infrastructure are crucial. Other resources, however, are also important. Huge lithium reserves are believed to be located in the salt lake of Salar de Uyuni (picture below) in Bolivia, for example.
Latin America is a region with potential, Franz Gruber, President of HOERBIGER Service Latin America Inc., headquartered in Deerfield Beach, Florida, USA, is convinced. “For quite some time, the atmosphere of the region has clearly been more optimistic than in the past.”

This assessment is not without reason. When Alicia Bárcena, the United Nations Executive Secretary of the Economic Commission for Latin America and the Caribbean (CEPAL, Comisión Económica para América Latina y el Caribe), presented the current economic report around the middle of December 2010, she was able to deliver numbers that show Latin America, after the crisis, in a considerably more stable position than many other industrial nations. According to CEPAL, the gross domestic product (GDP) of Latin America and the Caribbean, for example, rose as much as six percent in 2010. Experts forecast an increase of 4.2 percent for 2011.

Naturally, the global financial and economic crisis did not leave Latin America unscathed. The 2009 GDP shrank by 1.9 percent. And yet, many countries there regained ground comparatively quickly because they, according to CEPAL economists, relied on anticyclical measures and built reserves from raw materials revenue during good times.

Additionally, Latin America is rich in raw materials and natural resources. Chile and Peru, for example, are among the largest copper producers worldwide. Moreover, Latin America has huge deposits of iron ore, tin, bauxite, and—lithium, a resource with a future, which is required for the production of rechargeable, lithium-ion batteries used to power mobile phones, notebooks and electric cars. Bolivia in particular, but also Chile and Argentina, have huge reserves of the coveted metal. By far the largest deposits of lithium are presumed to be located in the Bolivian Highlands, at an elevation of about 12,000 feet, in the Salar de Uyuni. More than half of the world’s lithium reserves are reportedly hidden beneath the surface of the largest salt lake on the earth measuring about 4,000 square miles.

The oil and gas deposits of Latin America, which are immensely important for the local economy and the world market alike, play a central role for the region’s future. According to the BP Statistical Review of World Energy from June 2010, approximately 14.9 percent of proven oil reserves in the world and 4.3 percent of natural gas reserves are located in South and Central America.

The first major shale gas reservoirs in Argentina, which were confirmed only recently, allow the assumption that the intensive onshore and offshore activities in this area will bring additional considerable deposits to light and that, in the future, Latin America will account for a significantly larger share of the worldwide reserves of natural gas.

In the past few years, not only production, but also demand in the region have risen steadily. This applies in particular to gas production: while in 1999 production still was close to 3,300 billion cubic feet, the number had climbed to 5,300 billion cubic feet by 2009, which equates to approximately 5.1 percent of the global natural gas production. The riches, however, are not distributed uniformly. While Venezuela, for example, holds by far the largest oil and gas fields, Chile is dependent on imports, and when the supply of natural gas from Argentina ceased a few years ago, the country plummeted into an energy crisis.

With a view to the rising demand for energy for countries such as Brazil, Argentina, or even Chile, the significance of natural gas will increase in the future. The reason: many countries of the region are likely to succumb to the growing global environmental pressure to reduce carbon emissions; for power generation, natural gas is expected to replace fuels derived from petroleum. The International Energy Agency expects that the share of energy sources such as crude oil and derivatives in Latin America’s production of electricity will decrease from 11.4 percent in 2010 to 6.7 percent by 2030. At the same time, forecasts predict the natural gas share to rise from 19.7 to 23.6 percent.

In many places, a lack of investments in the necessary infrastructure poses an obstacle to the intended focus on natural gas. Germany Trade & Invest, GTAI, points out, for example, that inadequate production volumes in Colombia resulted in bottlenecks in 2009, and even Venezuela was not investing aggressively enough in the development of its abundant resources. Against the background of the rising energy demand, in the coming years the countries of Latin America will have to invest billions in upgrading their energy infrastructure.

As these countries expand their infrastructure, international know-how—including that of HOERBIGER—will be a sought-after commodity. As we said, Latin America is a region with potential.
“WE AIM TO LEAVE ...
Ricardo Opperman and Roberto Charron share their experience in working with the oil and gas industry in the Latin American region. Within this interview, Ricardo Opperman and Robert Charron explain how HOERBIGER contributes to the customer’s value chain in Latin America’s emerging market environment.

HOERBIGER@MOTION: What characterizes HOERBIGER’s market environment in Latin America?

Ricardo Opperman: Latin America has a vast fossil energy potential. Gas compression equipment is required for oil and gas drilling and production, natural gas transportation and petrochemical processing. That is good news for HOERBIGER. There is a big initiative to develop more offshore production across the entire region. Bolivia has substantial natural gas resources and is geographically situated to be the gas supplier of choice for Argentina, Brazil, Paraguay, Uruguay and Chile. To be a reliable supplier, Bolivia needs to speed up its exploration to turn around a decline in its proven reserves. Argentina has announced that it will invest in the construction of another pipeline that will transport natural gas into northern Argentina. Colombia’s internal security situation has improved substantially and has helped to open the door to renewed investment. Some analysts predict that Colombian oil production could surpass Venezuela’s within a decade.

Roberto Charron: We cannot look at Latin America as a homogenous market. The energy resources in each country vary as do their government’s energy policies. The products and services we offer to upstream customers extracting oil and gas from wells are different from the products and services required to process those hydrocarbons. We have tailored solutions for upstream, midstream and downstream requirements.

Ricardo Opperman: In Brazil and Mexico, downstream operations like petrochemical processing and refining are more prevalent. Oil and gas production dominates the Colombia, Argentina and Venezuela markets. The services we offer our customers depend on the customer’s maintenance philosophies. Some customers are looking to modernize their operations with control and monitoring equipment while others run equipment until it breaks down. Every customer is different.

HOERBIGER@MOTION: Who are the customers?

Roberto Charron: In addition to the local players, we also see the large multinational and state-owned oil companies from all parts of the world participating in the Latin American region.

Ricardo Opperman: Our customers recognize the HOERBIGER brand. They feel confident that our technology and local capabilities are supported by a global support infrastructure.
Ricardo Opperman (35),
Operations Director HOERBIGER Service Latin America, studied engineering at the University of São Paulo, Brazil. He started at HOERBIGER managing customer service for HOERBIGER do Brasil in 2002. Before he entered his current position he was sales manager for Brazil.

We have tailored solutions for upstream, midstream and downstream requirements.”
Roberto Charron, Managing Director

Roberto Charron (63),
Area Manager for the Andean region within HOERBIGER Service Latin America, including responsibility for the business in Venezuela, Colombia, Ecuador, Peru and Bolivia. In addition, Roberto Charron is Human Resource Director for the Latin American region. He studied engineering at the University of Puerto Rico. In 1991, he joined HOERBIGER when a joint venture was started in Venezuela with a local partner. He was instrumental in founding and building up our operations in Colombia in 2003 and Ecuador in 2006.
Roberto Charron: We offer direct access to all parts needed for the overhaul of rotating equipment. We also provide local engineering competence.

HOERBIGER@MOTION: What makes HOERBIGER’s services for Latin America unique?

Roberto Charron: Our engine and compressor overhauls and upgrades are of particular benefit to our customers. We have access to the world’s best engine and compressor technology; for gas engines we offer Altronic’s ignition and controls; for reciprocating compressors we manufacture key components like valves, rings and packing, capacity control and monitoring systems. We significantly enhance the life of operating equipment and increase the efficiency of the invested capital.

We have recently added a new service to our portfolio. We now specialize in low pressure, low volume well head compression equipment. Our portable units provide our customers flexibility to adjust to changing well conditions in mature oil and gas fields.

Ricardo Opperman: Our local presence in Latin America differentiates us from the majority of our global competition. We are always in the field, listening to our customers. We are able to respond quickly to customer needs—always with the best technology and tailored solutions.

HOERBIGER@MOTION: Closeness seems to be a benefit in the Latin American business environment …

Ricardo Opperman: Our local presence is the most important factor of our integrated service offering. If there is an issue with an application, we are always present to help and offer solutions. Our goal is always to satisfy our customers.

HOERBIGER@MOTION: It sounds like HOERBIGER is doing an excellent job in Latin America.

Ricardo Opperman: We aim to form partnerships with our customers and to offer reliable solutions for their needs. That’s what we understand as Service Excellence in Latin America.