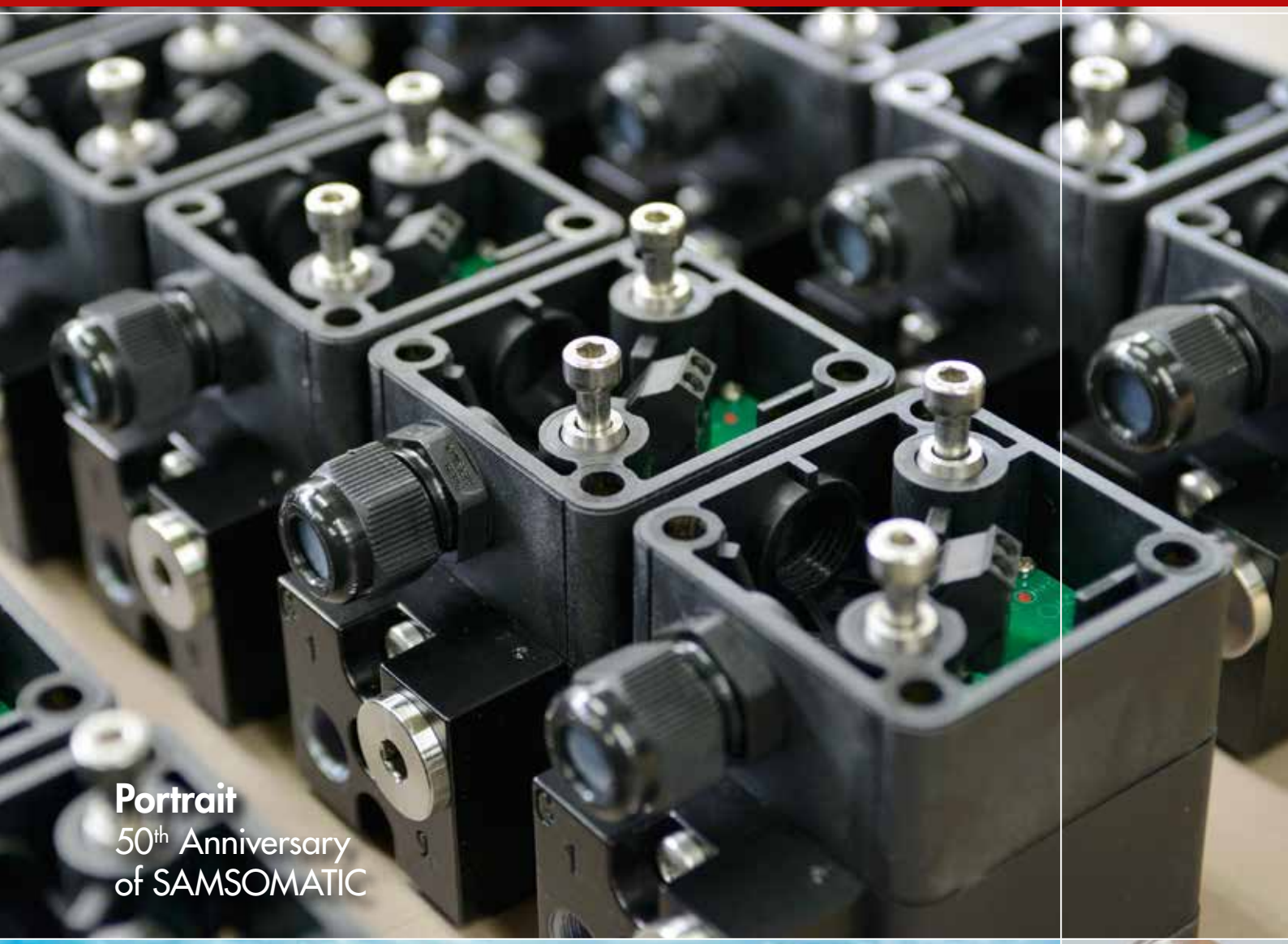
Issue 19

SAMSON

magazine

Where Innovation is Tradition

October 2015



Portrait

50th Anniversary of SAMSOMATIC

Innovations
Digitalization of Industrial Control Valves

Impulse
Promoting Interest in Technology

Special topic
Energypetrol: a Reliable Partner in Ecuador

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SAMSON's Roots in Frankfurt At Home in the World

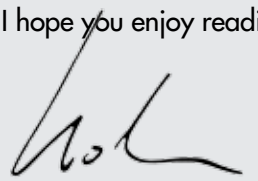
Dear Readers,

SAMSON is an international company owning subsidiaries on all continents and production sites in America, Asia, and Europe. Even today, more than 100 years after the company was founded, the headquarters is still located in Frankfurt am Main. The site allocated to our founding father by the local authorities in 1916 is still home to SAMSON's research and development, international sales, and administration as well as our largest production facilities. 40 % of the total SAMSON GROUP workforce comprising 4000 people worldwide work at this site. This is by no means a matter of course among German companies as the labor costs are high. In contrast, SAMSON benefits from the historically close ties between science, research, and industry, an excellent infrastructure, and a highly trained, motivated workforce that identifies with our company. Even employees with a strong urge to travel prefer to stay at SAMSON and use the opportunity to get relocated to one of the many subsidiaries abroad. In contrast, staff from abroad come to Frankfurt to get to know our long-established company better.

The main reason for SAMSON's success is the close cooperation between the headquarters and the subsidiaries and group companies in Germany and abroad. We invest in our workforce in all the locations where we are active and compete to win the best candidates on the job market. At the Frankfurt site, this means that we cannot ignore the demographic shift taking place in Germany. Therefore, we have launched our own demographics scheme to support young and old employees through training courses and staff training. We offer twelve different vocational training schemes and currently employ 140 trainees. As part of our recruitment drive, we maintain close contact with universities, offer placements, and provide students with the opportunity to write their bachelor's and master's theses at SAMSON. Five years ago, we started organizing the annual job information day, at which school and university students can gain more information on training and job opportunities. We raise awareness for our company within the region by participating in cultural events, such as the annual long night of industry (Lange Nacht der Industrie), or by taking part in many other large or small actions, such as sponsoring young robot engineers. The company in Frankfurt and worldwide benefits from this sort of involvement. So far, the imminent shortage of skilled workers has not yet become a key issue at SAMSON.

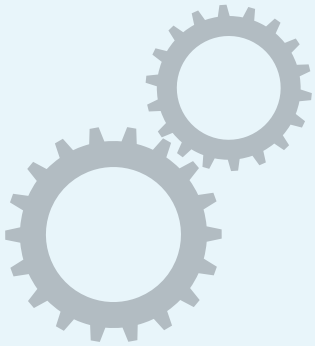
We highly rate our staff and the long years that they stay with the company indicate that our workforce appreciates SAMSON as well. The cultural variety makes our company stronger. Trust, enthusiasm, mutual respect, sense of responsibility, and initiative shape the entire company and the headquarters in Frankfurt. We strive to do our best to make it stay this way. In the future, we aim to continue serving our customers, improve the quality of our products, introduce innovations to the market, and drive forward the evolution of smart control valves to meet Industry 4.0 requirements.

I hope you enjoy reading this magazine.



Dr. Ingo Koch
Member of the SAMSON Executive Board
Finance, Controlling, HR, and IT

DIGITALIZATION OF INDUSTRIAL CONTROL VALVES

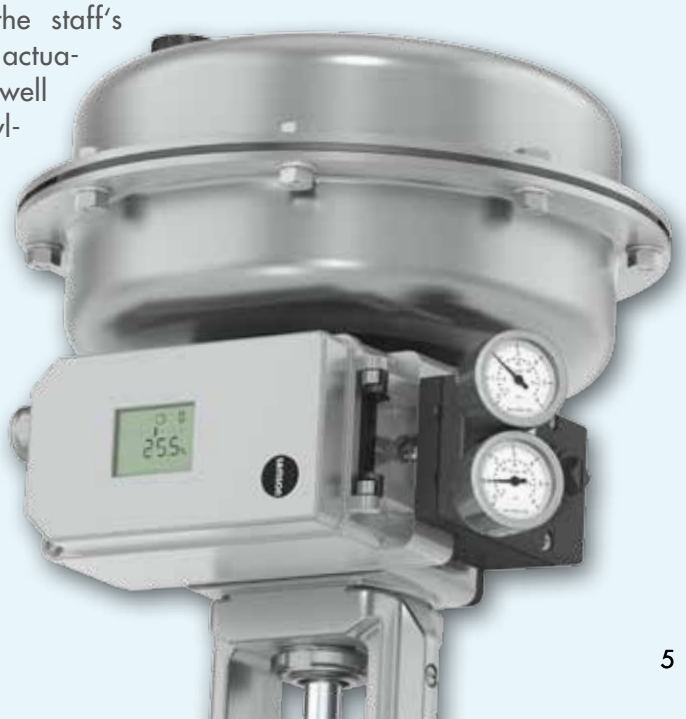


SAMSON, as a manufacturer of valves and valve accessories, recognized the benefits brought about by the digitalization of control valves at an early stage in the development. Ever since, the focus has been on this topic with SAMSON taking an active role in its implementation and further development. Back in 1986, SAMSON already participated in a joint project set up by different industrial companies to define a fieldbus for automation later to become PROFIBUS. Communication as it is offered by fieldbuses, for example, is essential to digitalization to forward collected data and/or data analyses. Currently, control valves are digitized using valve accessories, mainly positioners. In 1995, SAMSON introduced its first digital positioner with HART® communication to the market. In 2001, the Series 3730 Positioners were added to the product range. The series comprises positioners with integrated diagnostic firmware and different communication protocols. In 2012, the 75th annual general meeting of NAMUR was held with the focus on control valve engineering. Dr. J. Kiesbauer, member of the SAMSON AG executive board for R&D, gave the keynote speech, describing the evolution from manually operated throttles to smart control valves. SAMSON made essential contributions to all stages in control valve development described in the speech.

Today, mainly control valves for challenging tasks are equipped with positioners. Simpler valves, such as on/off valves for example, continue to be fitted with solenoid valves and/or limit switches. Their digitalization has not progressed quite at the same pace, even though SAMSON also offers digital solutions for such cases, for example the digital Type 3738 Limit Switch. The task for SAMSON is not only to meet the requirements for digitally interlinking supply chains at the customers', but also to develop innovative solutions, e.g. for Industry 4.0 environments. Control valves must be able to both transmit data to the entire system as well as to receive them. There is still some catching up to do in the digitalization of on/off valves to achieve the same level as for throttling valves. This is where benefits for business still need to be generated.

Digitalization allows control valves to be monitored around the clock. Variables that can directly be measured, such as the set point, actual value, set point deviation, or actuator pressure, can continuously be recorded and in the future, it will be possible to supplement them with further information. SAMSON counts on over 100 years of experience in valve engineering and has accumulated the necessary know-how to analyze the collected data and draw the right conclusions. The positioners alert operators of faults in or on the valve at an early stage. Messages indicating, for example an internal leakage or defective actuator springs, do not require the operator to further analyze the transmitted data. Together with the high-quality EXPERTplus valve diagnostics integrated into the positioner, digitalization increases plant availability as possible faults can be detected and removed early on. The objective for the future is to entirely prevent faults, for example by predictively stroking the valves in the plant as well as by proactive maintenance management. This makes the associated data and analyses on the control valves in the plant indispensable and provides an essential competitive edge. At SAMSON, the influence of digitalization goes far beyond the actual products: it has effects on all areas from production to after-sales services. As an innovative company, SAMSON is at the forefront of the evolution and new development of valves and valve accessories. Modern after-sales services are based on data collected throughout the product life cycle, which allows maintenance on individual valves and entire plants to be planned and performed systematically.

What happens with the collected data will be crucial for new developments in the future. Digitalization is not an end in itself; merely collecting and communicating data is not enough. Data must be made available for further use. This requires separating important from unimportant data and analyzing the gathered data in a targeted way. To make reliable statements on the condition of a valve, data analyses must be based on sound valve knowledge. At SAMSON, the staff's know-how on valves, actuators, and positioners as well as the customers' knowledge of the processes are integrated into the EXPERTplus diagnostics firmware. The undisputed benefit of such diagnostic results can be increased many times over if they are integrated into the process as well as into plant and maintenance management. On the one hand, this implies mastering the technical challenges, i.e. managing the amount of data and creating a uniform communication interface. On the other hand, companies must be prepared and willing to commit to a high degree of digitalization and define its limits. Which data do we want to be transparent? Are data sufficiently protected? How much of our corporate know-how do we want to become public knowledge? We are already familiar with such and similar questions from our private environment. SAMSON and the customers also need to find answers to them to fully exploit all opportunities presented by digitalization.



50 ANNIVERSARY
YEARS
1965 – 2015

SAMSOMATIC

Intelligent System Solutions

As the name suggests, SAMSOMATIC was founded by SAMSON. Relying on the know-how and experience gained in 50 years, around 90 employees working in Frankfurt provide technically and economically viable solutions for process automation, building automation, and production engineering.

Customers of SAMSOMATIC include leading companies active in the chemical, petrochemical, process engineering, energy supply, food and beverage, pulp and paper, textile, automotive, aeronautical, mechanical engineering, and municipal services sectors.
We have always been known for customer orientation, quality, and reliability. Customer proximity and flexibility are key factors contributing to our corporate success.

We provide our customers with an extensive range of expert services, from consulting, planning, project management, production, and start-up to individual services. Engineers and technicians from different fields work closely together in project groups and with our customers to turn ideas into intelligent solutions that are tailored to our customers' demands. Furthermore, predictive maintenance or service agreements allow us to establish trusting partnerships with our customers.

Our pioneering products include an innovative design tailor made to suit individual applications. Standardized interfaces and communication protocols ensure that the products are also compatible with products by other manufacturers, which makes them easy to replace or integrate into existing plants.

Safety in Process Automation

Plant safety plays a major role in process automation. Consequently, our products meet the highest quality demands. Solenoid valves and limit switches to control and monitor actuators ensure a high operational reliability in hazardous areas as well as in safety circuits. Pneumatic diaphragm switching devices offer high reliability and a long service life in tunnel boring machines or mobile respirators used in emergency care.

The automation solutions are proof of our expertise acquired in all areas

of process automation over the past five decades – from simple control loops to state-of-the-art process control systems. A few examples of the fields of expertise include automating autoclaves for food sterilization, heat exchangers used on test benches for engines, or heat transfer stations for industrial applications. Desuperheaters and steam cooling nozzles allow for economic steam conditioning in the food and paper industries.

Modern Building Automation

In building automation, decisive factors include security of investment, energy efficiency, and cost-effectiveness while providing high convenience. With our innovative products and customized software solutions, we produce plants for heating, ventilation, and air-conditioning systems for office buildings, hospitals, schools, public swimming pools, industrial buildings, combined heat and power plants as well as heat transfer stations for district heating networks.

Apart from standard control applications, SAMSOMATIC can implement all kinds of complex systems, from field level to modern building control systems. Custom process visualization with animated plant schemes makes it easy for operators to run and monitor plants. Alarm management functions immediately detect faults during operation and take appropriate action. Furthermore, Internet and modern telecommunications even permit remote monitoring and maintenance.

High-precision Production Engineering

Automated production requires constant monitoring to ensure a consistently high manufacturing quality. Renowned companies have always trusted our expertise in production engineering. Our proven size control and tools correction systems automatically compensate for tool wear, preset tool tolerances, and temperature fluctuations of the machining equipment, and this accurate to the micrometer. These systems are used, for example, in the precision boring of cylinder blocks or gearboxes in the automotive industry. The dimensions are measured and analyzed according to modern aspects of statistical process control (SPC). The smallest dimensional deviations are quickly recognized and the position of the cutting tip is constantly changed during machining.

Strong in the SAMSON GROUP

As part of the strong alliance of companies within the SAMSON GROUP, SAMSOMATIC benefits from the international sales and service network to provide professional plant maintenance and service for failures even at short notice. In this way, we can ensure increased plant availability and strengthen the competitiveness of our customers in the long term.

Mr. Gregor Thome, CEO of SAMSOMATIC GMBH since 2015

Headquarters of SAMSOMATIC GMBH in immediate vicinity to SAMSON AG

ENERGYPETROL – a Reliable Partner in Ecuador

Located on the equator and surrounded by the Andes mountain range, Ecuador is situated in western South America on the coast of the Pacific Ocean. The country with a population of around 15 million is famous for its biodiversity: who has not heard of the giant tortoises at home on the Galápagos Islands. Starting not far from the capital city of Quito, the 200-km-long Avenue of Volcanoes includes Ecuador's highest mountain. Even though Chimborazo with 6,310 m is somewhat shorter than Mount Everest, its summit is still the highest point on the Earth. How can this be possible? The Earth is not an evenly shaped globe. Instead, its rotation and resulting centrifugal force make it an oblate spheroid. It is squashed at the poles and bulges around the equator, making the summit of Chimborazo the furthest point from the Earth's center.

Since 1993, SAMSON has been working together with Ecuador-based companies: first with the plant engineering company ACIST Internacional and after the merger of several corporate units in 1998, with Energypetrol. The company not only acts as a representative. It also operates as system integrator in the oil and gas business and offers technical equipment for the petrochemical industry, fire detection systems, and engineering services. Its main business activities include the planning and construction of plant components, such as horizontal three-phase separators, which are used in the upstream process to clean crude oil. After excavation, the crude oil is processed in a separator used to separate the oil from water and gas.

Oil reserves amounting to hundreds of millions of barrels await extraction in the Amazon basin located in the west of Ecuador. This natural resource has allowed the Ecuadorian economy to grow considerably in the past few years and, despite falling oil prices, the income from oil will still make up around 10 % of the country's gross national product in 2015.

80 % of the national oil production is undertaken by the state-owned oil corporation Petroamazonas S.A., whose fields of business include oil

Bartolomé Island is a volcanic islet in the Galápagos Islands group just off the east coast of Santiago Island.

Typical three-phase oil separator fitted with SAMSON valves

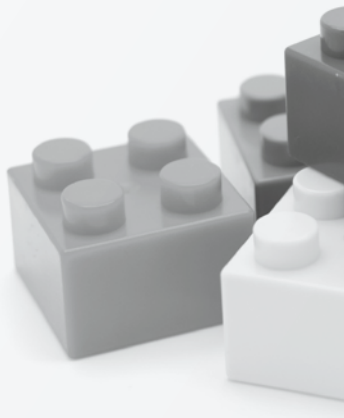
Valve service performed by staff from our SAMSON partner in Ecuador

exploration and strategic activities in oil processing. The company has over 20 blocks (areas assigned by the government licensed for oil production) in which it operates 83 oil fields.

Since 1996, SAMSON's partner Energypetrol has maintained business relations with Petroproducción, the national oil corporation at that time. The first project involved technical development for the construction of the first oil separator. Energypetrol continues to construct these units for the successor, Petroamazonas, with capacities of up to 30,000 bpd (barrels per day). 140 SAMSON valves control the supply of crude oil and the transport of the separated oil, water, and gas in 40 installed separators.

The concept chosen by SAMSON to cooperate closely with a partner has proven its worth in Ecuador as well. Energypetrol acts both as a sales representative and service provider. The maintenance of valves and the fast delivery of spare parts also help customers in South America operate sustainable and safe processes.

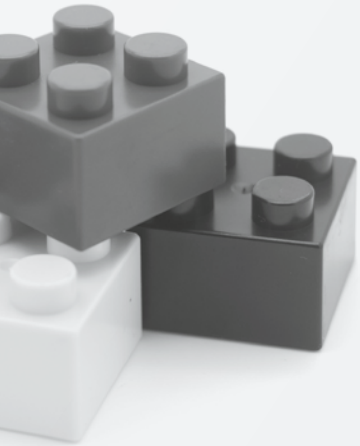
PROMOTING **INTEREST** IN **TECHNOLOGY**

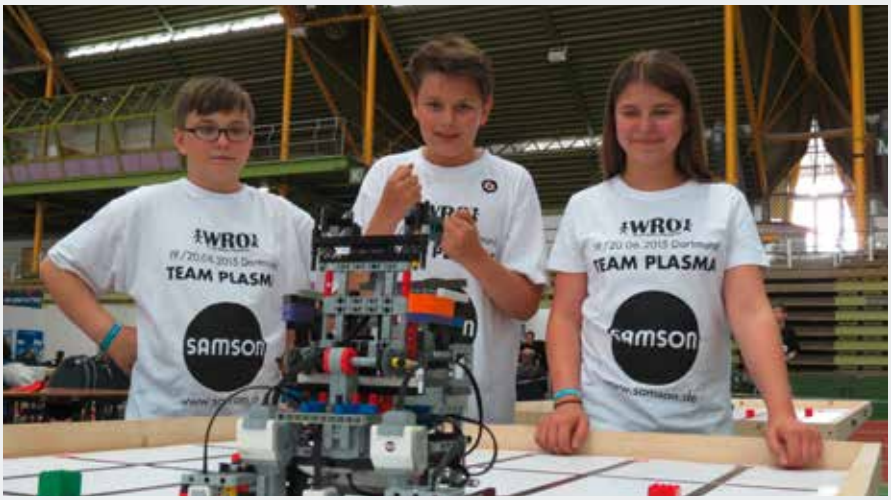


Chances are good that the visitors of SAMSON's job information day have already run into the engineering, IT, and technical staff of the future. Students use the event to gather information on training and job opportunities at SAMSON. As expected, prospects with a technical interest heard a lot about the industrial applications that SAMSON products are used in from the executive board members and staff. The presentations by a Lego club from a small town near Frankfurt, however, may have come as a surprise to some visitors.

Three teams from the Bad Homburg Lego club were part of the events held at the fifth SAMSON job information day. The students aged 8 to 13 presented the robots they had build from LEGO® MINDSTORMS® bricks. Visitors, helpers, and the organizers of the annual job information day were equally impressed by the enthusiasm and technical know-how that the students displayed. A member of the SAMSON project management staff made SAMSON aware of the Lego club and helped three teams from the club participate in a regional qualification event for the World Robot Olympiad (WRO) in Offenbach and the German finals in Dortmund.

The Lego club and its honorary coach, Dr. Sebastian Schaub, meet once a week to rack their brains on programming and optimizing robots. Each team comprises two to three students. Some of the tasks they work on are set by the WRO organizers. The teams show off their skills at regional qualification events from where they can advance to competitions held on a national and international level. The qualifier for the Rhine-Main area took place in Offenbach, literally across the river from the SAMSON headquarters in Frankfurt. All three teams sponsored by SAMSON participated with great success: Team Limes and Team Taunus participated in the Elementary age category (8 to 12 years) and finished in 5th and 7th places respectively. In the next-higher Junior age category (13 to 15 years), Team Plasma finished well ahead of all other teams and as the winner, the team qualified for the German final held in Dortmund in June. Finishing fourth at the final, the team missed the podium by a bit but won one of two spots for the World Adolescent Robot Contest in Beijing. This international event will be celebrated as part of the 2015 World Robot Conference (WRC). It is co-organized by the Chinese ministry of industry and information technology and will take place in November 2015. As a result, the task for Team Plasma is clear when school starts again after the



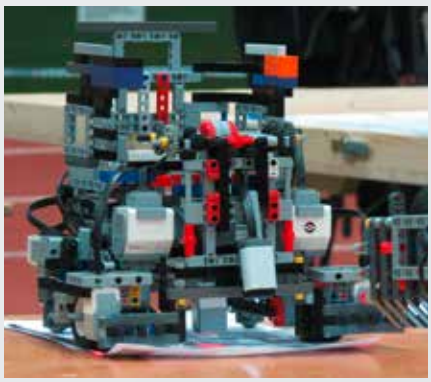


Team Plasma at the German finals held in Dortmund while test running the robot

summer: do everything to prepare for the Beijing event. As during the qualifier and German final, the team will start in the Regular category, where the robots are built from LEGO bricks only. Programming is similar to the graphical programming interface used for the TROVIS 6600 Automation System by SAMSON, with function blocks that need to be selected and linked as required to solve the challenge at hand. The objective is for the finished robot to complete different tasks, such as navigating on the playing area, bypassing obstacles, detecting colors as well as collecting and transporting objects. On the day of the competition, the students have two-and-a-half hours to build the robot they designed and install the software. The teams are allowed to bring the software they have developed during club training, but the robot itself must be assembled from scratch without instructions, plans, or photos. All details of the hardware must be known from memory. When the robots have been assembled, each team goes to a playing table. This is where construction and programming are put to the test. In addition to the challenges published before the competition, an additional task must be completed with as few mistakes as possible. At that stage, it all comes down to staying calm and applying the learned skills. The robots have two minutes to master the challenges. Points are granted for tasks completed successfully, whereas points are deducted if the robot fails at a challenge. The time required also counts into the result.

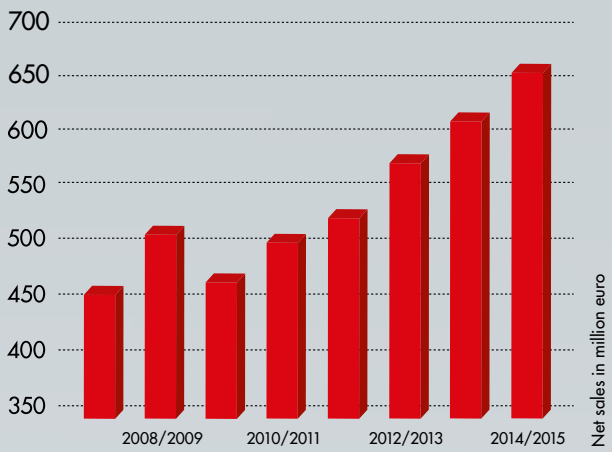
SAMSON is proud of having supported the successful teams Limes, Taunus, and Plasma and of sponsoring Team Plasma on its way to Beijing. Many students find the MINT subjects (mathematics, IT, natural sciences, and technology) difficult and heavy going. Initiatives like the Bad Homburg Lego club can spark enthusiasm for these subjects among students and in the long term, help counterbalance the imminent shortage of skilled workers for industry.

Team	**Limes**	**Taunus**	**Plasma**
Members	Vincent Hestert Lennart Urban Boris Kantor	Stella Broux Fatih Kirim Tom Fabel	Dominik Bug Sarah Czinkota Moritz Gräf
Age category	Elementary	Elementary	Junior
Category	Regular	Regular	Regular
Results World Robot Olympiad (WRO) 2015 **Participants:** 313 teams in Germany Over 22,000 teams in over 50 countries worldwide	**5th place** at regional competition in Offenbach	**7th place** at regional competition in Offenbach	**1st place** at regional competition in Offenbach **4th place** at German final in Dortmund Qualified for World Adolescent Robot Contest in Beijing



SAMSON worldwide NEWS

2014/2015 financial year



Five in a Row: Annual Group Sales Rise yet Again

In October 2014, the International Monetary Fund (IMF) trimmed its forecast for global economic growth to 3.3 %. The stagnant euro area, geopolitical crises, and a continued investment weakness were given as the reasons for this decision. All in all, sales of the SAMSON GROUP throughout the 2014/2015 fiscal year looked more positive. Compared to the 2014 fiscal year, sales increased by 7.5 %, reaching 667 million euro. Within the SAMSON GROUP, above-average sales increases were recorded in the NAFTA countries (Canada, Mexico, and the US) with +17 % and the BRIC countries (Brazil, Russia, India, and China) with +15 %. The highest sales were again generated in Germany. Negative effects on group sales arose from the on-going conflicts in the Middle East (–21 %) and Russia (–10 %); they will at least affect the current fiscal year.

New CEO and Chairman of the Board

In April 2015, the Supervisory Board of SAMSON AKTIENGESELLSCHAFT named Dr. Andreas Widl Chairman of the Executive Board. Dr. Widl joined SAMSON as an additional member of the executive board in June 2013 and took over as the head of Sales, Marketing, and Strategy after a four-months transitional period. Dr. Widl holds a doctoral degree in physics. Before he joined SAMSON, he had served in executive positions at the Mannesmann group and GE Capital. In the Swiss Oerlikon group, he was responsible for restructuring several business units. As Asia regional executive and president, he held responsibility for the group's growth in the area. And Dr. Widl served as CEO at Leybold Vacuum for over four years. In the previous edition of the SAMSON Magazine, Dr. Widl phrased his vision for SAMSON's future as follows: "In five years, our overall added value – from customer acquisition, processing incoming orders, production to successful final acceptance testing, and first-rate international customer service – should figure among the most efficient in our sector." New corporate core values, the standardization of processes, and digitalization have been implemented to help achieve this goal, if possible a little earlier.

Entrepreneur with Tradition

Mr. Rolf Sandvoss, great nephew of the founding father of SAMSON and honorary chairman of the SAMSON AKTIENGESELLSCHAFT Supervisory Board, passed away on 28 December 2014 at the age of 78. For over 40 years, Mr. Sandvoss had made his influence on the company felt in his position as member of the supervisory board, whose chairmanship he had held for 28 years. In those years, SAMSON evolved into a modern industrial company and established itself in all emerging markets by continuously innovating its products. Apart from economic success, Mr. Sandvoss always had the staff's interests at heart. His entrepreneurial spirit, reliable judgement, and distinguished management style continue to have a significant effect on our corporate SAMSON philosophy.

50th Anniversary of Homberg Site

In November 2014, the Homberg site of SAMSON AKTIENGESELLSCHAFT celebrated its 50th anniversary. In 1964, SAMSON acquired the former supplier Feinmechanik Seitz and has since continued to extend the site. Today, around 50 device types from the SAMSON product range for HVAC applications are manufactured in Homberg, which is why the facilities are also referred to as SAMSON's center of competence in electric and electrohydraulic actuators. The Homberg branch belongs to the Frankfurt production site. As a result, cooperation between staff in Frankfurt and Homberg is very close. Employees from many areas, including R&D, quality assurance, and production scheduling, meet almost weekly to discuss and agree processes and projects.

New Production Facilities in Turkey

This year, a new building with a total of 11,050 m² in covered area was constructed at our Turkish production site. 55 employees work at the Istanbul facilities. The site was founded in 1984 and in 1992, moved to facilities shared with the sales staff in the Güneşli quarter in the Bağcılar district located on the European side of Istanbul. Gradually, the warehouse and production facilities grew too small as well. As a result, the decision was taken in 2014 to construct a new building in Arnavutköy, another of Istanbul's European districts. Staff moved into the new building in 2015. SAMSON A. Ş., our subsidiary in Turkey, manufactures self-operated regulators and control valves for the domestic and international markets. SAMSON products are used in many industries in Turkey, including the steel, chemical, textile, pulp and paper, packaging, and automotive sectors.

25th Anniversary of AIR TORQUE

In 2015, the actuator specialists at AIR TORQUE celebrated the 25th anniversary of their company headquartered in northern Italy. It all began in 1990 with a pneumatic actuator made of aluminum available in five different sizes. Since then, the product range has been expanded continuously. Through constant innovation and development and thanks to the high quality of its products, AIR TORQUE has become a worldwide leader in pneumatic rack-and-pinion actuators made of aluminum and stainless steel. Recently, a new line of scotch-yoke actuators has been launched on the market. AIR TORQUE joined the SAMSON GROUP in 2002. Currently, the company employs 60 members of staff and manufactures over 300,000 actuators annually in its 8,000-m²-large facilities.

SAMSON AKTIENGESELLSCHAFT
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
E-mail: samson@samson.de · Internet: www.samson.de

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