



AERZEN

COM·PRESS

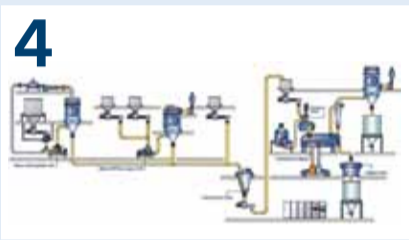
150 years AERZEN

Pioneer from tradition



Joint project

Eleven vacuum blowers for production of detergents



Aerzen China

Groundbreaking in accordance with Feng Shui



Dear Readers,



Bernd Wöhlken,
Managing Director,
AERZEN

Many of our customers have been working with AERZEN for decades. We thank you for this long-term partnership. We, as AERZEN staff, have appreciated your partnership and support particularly strongly in the year 2013, as Aerzener Maschinenfabrik addressed one of the biggest challenges in the company's history - the introduction of a uniform ERP system "SAP". The ERP conversion at Aerzen

headquarters was overdue, and the objective was to put the AERZEN group on a new and fully integrated IT platform on the way towards our vision 2020. This work has now been completed - it is an important development which will make the processes within AERZEN group not only more efficient, but above all more reliable. Providing reliable support to you, our worldwide customers and business partners, will be a key area of focus within the AERZEN group in 2014. It is an important element as we mark Aerzener Maschinenfabrik's 150th anniversary.

We want to celebrate this anniversary with you and will introduce, after 150 years, a new brand positioning of the AERZEN Group in the global market. And now, please enjoy reading further details in this edition of COM.PRESS.

We look forward to a future of successful cooperation and further strengthening of the partnership between you and the AERZEN Group.

Yours

With solid values through turbulent times

Review - Outlook

Klaus-Hasso Heller,
Chief Executive Officer AERZEN

Our investment volume is still at a very high level and our growth course continues.



AERZEN looks back on a turbulent year. The predominant event was surely the introduction of the SAP programme, which, as expected, presented a challenge for the company. Despite this, there were numerous successes, with a number of constructive developments undertaken, and there was positive customer reaction to product innovations from AERZEN.

As at 31st December 2013 AERZEN had already booked incoming orders totalling € 210 million. This proves how well product innovations such as turbo blowers or Delta Hybrid are being accepted in the market. The topic of energy efficiency has been, and will continue to be, of great importance, and here AERZEN is one step ahead. No other company offers such a wide range of technologies and products, from which customers can select the best ones for their particular application.

Highlights 2013

One of the highlights of last year was the delivery of a VRO 936, probably the biggest screw compressor in the world. The

compressor stage will be used as stand-by compressor in a chemical plant in Italy for the production of plastics. The first AERZEN unit had been delivered there back in 1984, and now, after having been in operation for 30 years, the customer decided to install a new, more efficient compressor stage, of course again made by AERZEN.

Another highlight: a VMY536-packaged unit delivered in December. The highly complex compressor packaged unit made by AERZEN is used at a well known chemicals group in Ludwigshafen.

And at the Aerzen site the company opened a new office building, partially demolished the old administration building and completed the shell construction

for the next office building construction stage and for a new logistics centre. Together with further investments in production engineering the investment ratio is eight per cent of forecast turnover.

Highlights 2014

Besides the completion of the construction work at the Aerzen site, the highlight for 2014 will surely be the 150th anniversary of AERZEN. In addition to the official celebration for customers and colleagues, there will be many other activities. For example, the in-house exhibition AERZEN EXPO 150. To mark this anniversary, this exhibition will showcase our products and services and present the manufacturing range of the company to our

The product innovations from AERZEN whirl up the market.



New regional manager for America



Friedrich Harten

At the beginning of 2014 Friedrich Harten was appointed regional manager within Aerzen International Sales, and he is thus responsible for the control and operational leadership of the sales and service network of the AERZEN

group in America. The graduate engineer in mechanical engineering has many years of experience in the capital goods industry. He has worked in various positions with international orientation, in both big concerns as well as in small and medium-sized enterprises. In his most recent role he worked for a German-American pump manufacturer focussing on the oil and gas industry.

Personnel changes at Aerzen Turbo



Chungsup Um

Mr. Chungsup Um started work as Managing Director of Aerzen Turbo on 2nd December 2013, succeeding Rob Lammers. Prior to taking up this role the 44 year-old had worked as a consultant for various other international

companies. Early in 2014, Lammers returned to Europe to become Director Turbo Business for Aerzen International Sales GmbH. After working for three years in Korea for Aerzen Turbo, which he set up with a number of other colleagues, Lammers is now responsible for sales development, organisation of the Turbo business and improving of the Turbo production network.

Spare Parts: Better Take the Original!



Aerzen original spare parts are specially designed for the compressors and blowers of Aerzener Maschinenfabrik. Consequently, they stand for a high degree of reliability and safety. In addition, Aerzen After Sales Service offers warranty, a vast storage and a quick identification of the correct parts as well as short delivery and reaction times. In short: Confidence is good – Original is better!

> customers and business partners, including at an open day in September. Furthermore, the anniversary and the new brand positioning (see below) will also play a major role at the forthcoming important IFAT and Powtech trade fairs.

As far as product innovations are concerned, in 2014 customers can look forward to extensions of sizes for Delta Hybrid and Turbo Generation 5 machines. And the developments continue ...

News from the subsidiary companies

And at the beginning of 2014, in Shanghai, China, building work began on a new facto-

ry for Aerzen China. The construction work is scheduled to be completed by the end of 2014. In Peru, a new sales and service company will be established.

For AERZEN the target is clear: Growth. The company and its customers will benefit from a stable and extensive use of the new SAP system.



The compressor packaged unit VMY536 on its way to Ludwigshafen.

AERZEN's new brand positioning

Expect performance

To mark our 150th anniversary, AERZEN has a new brand positioning. This includes a new brand awareness campaign as well as a new brand appearance.

The new brand AERZEN offers clear differentiation. In essence, the brand leads the customer to a better orientation. It acts like a label, or quality seal, with which all our products will be provided, expressing our quality promise.

Thanks to the new philosophy "Expect Performance", AERZEN underlines the

company's key messages to our worldwide customers - offering top performance and redefining quality. Quality becomes "Performance", creating a range of attributes:

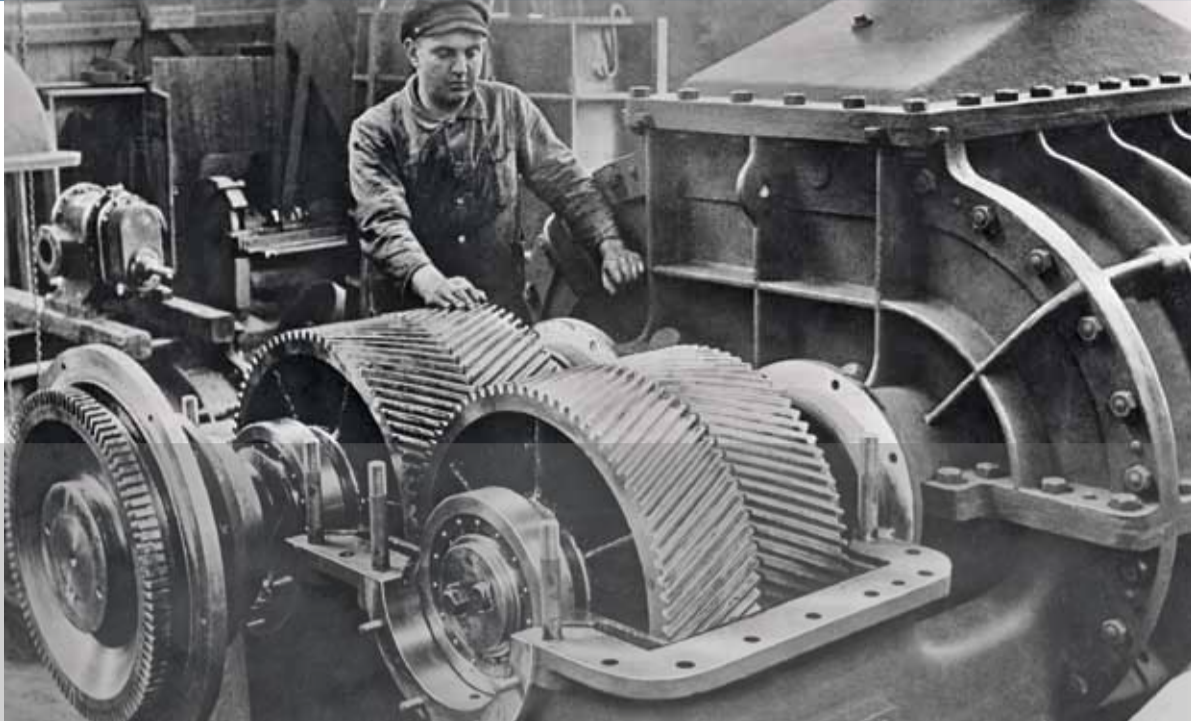
- Quality and reliability
- Know-how and experience
- Innovation and energy efficiency

"Expect Performance" gets right to the heart of the philosophy that pushes AERZEN forward. This philosophy conveys a message which is aimed at all our customers. Our customers can expect pure performance, whenever they contact AERZEN staff or work with machines made by AERZEN.

The quality promise is reflected in the modern new corporate design and three-dimensional logo. This logo looks like a quality seal and it "enables" the products made by AERZEN.



Brand – Values – Goals: AERZEN has big plans.



At the beginning of the 1930s AERZEN concentrated on the production of positive displacement blowers.

ments in the control range to enable quick responses to strong fluctuations in airflows, as well as to adapt flexibly to vari-

Björn Irtel, Managing Director AERZEN

The development, and further refinement, of blowers primarily took place at Aerzener Maschinenfabrik. This product "has been alive" since 1868 and still finds new fields of application today.



150 years AERZEN, part 1, 1864-1930

A pioneer emerges from its traditional roots

In 2014, AERZEN looks back on 150 years of company history, characterised by an ability to meet demand for high quality products and coming up with innovative product ideas. We present here, to mark our anniversary, some of the product highlights of our family-owned company.

Harrows, tedders, drinking fountains and grave crosses. In 1864, when AERZEN was founded in the town of the same name, its scope of products was relatively unspectacular. Today, 150 years later, AERZEN is among the leading manufacturers of machines for the conveyance and compression of gases in the world. Despite great challenges, for example rampant inflation in the 1920s, the world economic crisis and the threatened shutdown in the post-war period, AERZEN was always one step ahead of the competition insofar as developing innovative products was concerned, and always maintained a targeted focus on the needs of its customers.

AERZEN rotary piston machines conquer the world

Four years after the foundation of the company, the first rotary piston machines were manufactured in the own iron foundry as

per procedures developed by Francis Marion Roots. These machines worked with only two gear wheels, which increased their efficiency considerably. First of all, AERZEN manufactured blowers with wooden rotary pistons and a plaster cast for the required external sealing. Soon, AERZEN supplied blowers as well as individual items, including accessories for self-manufactured units. Starting in the 1880s, AERZEN manufactured patented rotary pistons made of iron, which extended considerably the application fields of the blowers. The rotary pistons could be used in almost all branches of industry. By the beginning of the 20th century, AERZEN was already one of the most efficient blower manufacturers in the world.

Turbo blowers manufactured according to customer specifications

AERZEN's willingness and ability to provide individual customer solutions at any

time was shown by its move into the production of turbo blowers for iron foundries, mines and the chemical industry in 1911. In close co-operation with customers, production processes were tested and continuously improved.

Soon, turbo blowers could be made with a drilled-out housing and horizontally divided side plates in vertical and horizontal designs. Their point of differentiation was that the housing and the bearings were kept separate. The milled gear wheels ran in an enclosed gear case, and an overpressure of up to 6,000 mm water column could be attained.

Inspectors from the University of Technology in Berlin certified the biggest turbo blower manufactured in 1911, with type reference N1, as demonstrating "considerable increase of reliability of service and convenience in operation". In this respect, the reduced construction weight, improve-

ous performance levels by means of the housing types, all played a key role.

Rotary piston gas meters - a step towards specialisation

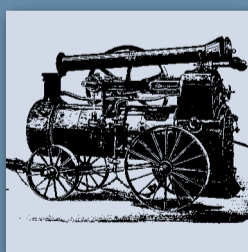
Then, as a result of the stock market crash in New York in 1929, followed by the world economic crisis, the company-owned foundry had to be closed and numerous products were discontinued. At the same time, AERZEN started the production of rotary piston gas meters, wherein the company reverted to the proven Roots-principle - a decisive step on the path towards a special factory for positive displacement machines. One of the advantages of the new product was its ease of maintenance. Furthermore, the rotary piston gas meters worked without water, so they could operate regardless of the outside temperature and could thus be used outdoors.

The rotary piston gas meters made by AERZEN were able to measure larger gas quantities, independent from pressure, specific weight, temperature and other conditions of the gas, and thus replaced the expensive and large wet gas meters. Among the early customers were Ruhrgas AG and Friedrich Krupp AG. Starting in 1932 Aerzener Maschinenfabrik supplied gas meters for medium pressures up to 1 at (gauge) and for high pressures up to 6 at (gauge). The success of rotary piston gas meters continues right up to the present day. In the field of industrial gas measurement, AERZEN continues to enjoy a large market share in Europe. ○



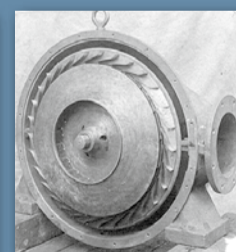
1864

Agricultural machines were manufactured at AERZEN.



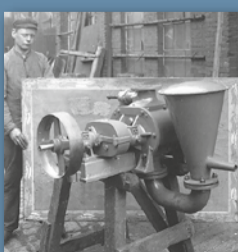
1880

The locomobiles for threshing machines were in great demand, also abroad.



1911

AERZEN started the production of turbo blowers.



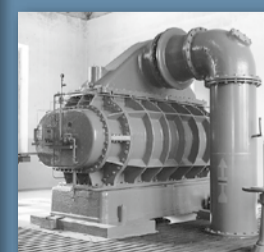
1868

AERZEN produced the first positive displacement blowers manufactured on the mainland.



1909

Modern dedusting units automatically cleaned the house with central blower



1930

Rotary piston gas meters supplemented the product portfolio and soon became a best seller.

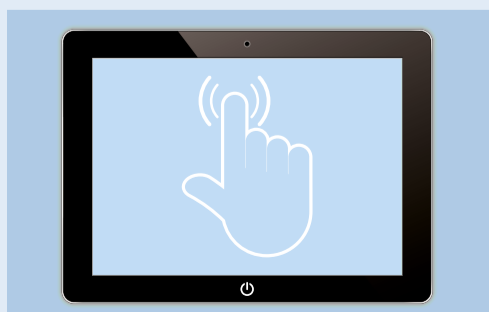
Exhibition dates

In 2nd quarter of 2014, Aerzener Maschinenfabrik, its sales companies and representatives, will once again participate in fairs and trade exhibitions worldwide of a number of different industries.

- Florida Water,**
Lake Buena Vista/USA 6th-8th April 2014
- IEEE,** Washington DC/USA 13th-17th April 2014
- Texas Water Hilton Anatole,**
Dallas/USA 14th-17th April 2014
- Mining Copperbelt Trade Expo,**
Kitwe/Zambia 28th/29th April 2014
- CWEA,**
Santa Clara/USA 29th April-2nd May 2014
- Utah Water,**
St. Georg/USA 29th/30th April 2014
- Pump Centre,** Telford/GB 30th April 2014
- IFAT,** Munich/Germany 5th-9th May 2014
- Powder/Bulk Show,**
Rosemont/USA 6th-8th May 2014
- AWWA/HWEA 1st Joint Conference,**
Hawaii/USA 7th-9th May 2014
- Arizona Water Glendale/USA** 7th-9th May 2014
- ClimatAqua TekS,**
Krasnoyarsk/Russia 13th-16th May 2014
- Puerto Rico Water,**
San Juan/Puerto Rico 19th-21st May 2014
- IFAT,** Shanghai/China 20th-22nd May 2014
- Indo Water,**
Surabaya/Indonesia 21st-23rd May 2014
- EasyFair Schüttgut,**
Dortmund/Germany 21st/22nd May 2014
- SEMINAR for Turbo & Hybrid,**
Shanghai/China 23rd May 2014
- Australasian Milling Conference,**
Brisbane/Australia 25th-27th May 2014
- Oil and Gaz,**
Moscow/Russia 26th-29th May 2014
- Irish Water,** Dublin/Ireland 28th/29th May 2014
- AICD Expo,** Orlando/USA 1st-3rd June 2014
- Singapore International Water Week,**
Singapore 2nd-4th June 2014
- Maintain,** Munich/Germany 3rd-6th June 2014
- Ecwatech,** Moscow/Russia 3th-6th June 2014
- EXPO APA,**
Bucharest/Romania 10th-12th June 2014
- KOREA CHEM,**
Goyang/Korea 10th-13th June 2013
- Craft market,**
Aerzen/Germany 21st/22nd June 2014

AERZEN goes App

Of late, AERZEN has been offering company-designed applications in the famous App stores. These include a unit converter specially for compressors applications, converting important parameters like pressures, temperatures, volume flows and performance data simply and quickly into diverse units. In addition, there are Apps available for the latest products, including Delta Hybrid, Delta Screw and AERZEN Turbo. All Apps are designed for Android as well as for Apple Systems. And best of all: AERZEN Apps are free of charge.



Proven co-operation

Co-operating to produce a “clean” result

In a joint project with Gericke BV and Hosokawa Micron BV at the beginning of February 2014, Aerzen Nederland supplied eleven vacuum blowers for a plant in Russia producing detergents.

Messrs. Hosokawa, a system provider in the field of drying, grinding, mixing and agglomeration of powders, with a subsidiary company in the Netherlands, received an order for a complete dosing, mixing and agglomeration unit for the production of various detergents for the Russian market. Hosokawa supplied the entire installation for a total of eleven extraction systems- and their partner Gericke was responsible for the eleven negative pressure systems.

The components matter

Since the 1970s, Gericke BV, a subsidiary of the Swiss company Gericke AG, has been supplying bulk material- handling systems to the Benelux states and far beyond. Customers mainly benefit from the company's know-how, which achieves optimal functionality due to the selection and interac-

tion of high-quality components. Finally, Gericke also provides a complete system warranty.

As far as the topic of transport is concerned Gericke counts on the proven quality of blowers made by AERZEN. “We know exactly, how the components harmonise with the products specified by the customer and we know the flow rating of the powders or granulates”, says Ruud Padt, Sales Engineer at Gericke BV. “Furthermore blowers made by AERZEN can be adapted very

easily to modified requirements concerning pressure or air, without having to change the complete machine.”

Utmost flexibility

Thanks to Delta Blower Generation 5 and Delta Hybrid, Aerzen Nederland BV can make adaptations to modified process data at short notice – if necessary even shortly before delivery. This makes it possible to complete a project, even though the parameters may have changed, within budget and within the agreed delivery time. The service department of AERZEN also contributed towards meeting the expectations and requirements of the end users, Hosokawa Micron and Gericke, and thus to reliable delivery and completion of the project. ○



Together with Gericke BV (I.), Aerzen Netherlands has equipped a unit for production of detergents.



VRa 736 S for BASF Antwerp

AERZEN compressor involved in the extraction of butadiene

AERZEN Belgium supplies a screw compressor VR 736 for a new plant for the extraction of butadiene at BASF Antwerp.

BASF Antwerp is Belgium's largest Verbund site of chemistry and is also the second largest production site of the BASF group worldwide. The premises, located at the harbour in Antwerp, cover an area of 600 hectares and include 54 integrated production plants. At the end of 2014, a new production plant will commence operations – at its heart will be a VRa 736a made by AERZEN.

The compressor will be used for the extraction of butadiene, a raw material which is used, for example, in the production of synthetic rubber. The tire industry is one of the major customers of this rubber butadiene. Even the paper and plastics industry

can make use of butadiene. BASF Antwerp extracts butadiene on the basis of raw C4, a product of the so-called steam cracker.

At the beginning of 2013, Aerzen Belgium received the order of the VRa 736a S

and the unit was delivered in component form in August 2013. Technicians from Aerzen Belgium are currently completing the mechanical installation on site, while After-Sales and Quality Assurance specialists in Aerzen are engaged in the final jobs and tests concerning switch cabinets and software. Commissioning will take place in the summer of 2014. ○

In summer 2014, the new unit of BASF shall be taken into operation.



Aerzen China

Groundbreaking in accordance with Feng Shui

Shortly after the Chinese New Year, on 10th February 2014, groundbreaking for the new building of Aerzen China was celebrated in Shanghai.

In a carefully planned sequence, the persons present, accompanied by a Feng Shui master, offered prayers, before a cord was cut and the groundbreaking was carried out. Besides the around 50 employees of Aerzen China, Chuck Lim, Area Sales Manager Asia, several customers, as well as representatives from the Chinese authorities were present. Together with the Heller couple, the employees were in a jovial mood as everything has been done to ensure a smooth construction process and a future of successful working in the new building of approximately 8,000

square metres. Soon afterwards, work started on the base plate, and the necessary ground stabilization work for the

building commenced. The completion of the new factory is planned for the beginning of 2015.



Groundbreaking for the new building of Aerzen China



Investments at AERZEN

Flexible manufacturing system extended

Almost two years ago, the first section of the flexible manufacturing system Fastems was successfully integrated into our production. The first extension then followed at the end of February 2014.

A brand new arrival is the HEC1000, an accurate 5-axis machining centre produced by Messrs. Heckert. This machining centre has been added to the HEC800X5 used up until now. Here, the housing parts of Delta Hybrid will be manufactured in future in one voltage, i.e. in a single work step. The set-up times are approaching zero.

As with the HEC800X5, the production sequence of the HEC1000 can be set up by an employee through the master computer of the system Fastems. Tool inspection and the manufacturing process of both machining centres are also managed by the master computer Fastems.

In order to guarantee trouble-free integration of the new machining centre, some of the components had to be adjusted to AERZEN's special requirements. Therefore,

a completely modified machine table is now used. The travel distance of the Y-axis was increased. The transfer table from machine to operating unit Fastems is a special development produced by Messrs. Heckert.

The pallet size of 1,000 x 800 mm is compatible with the pallet size of the HEC800X5. Therefore, colleagues working

in production are in a position to process selected housing parts by means of either machine at a time.

Besides the new procurement, the old system has also been modified – for example, the racking system has been extended. A third machining centre will be established by the end of 2015.



The new HEC1000 Athletic



Automatic re-lubrication devices

AERZEN has for many years been offering service contracts in various categories. These contracts are handled up to twice a year by an Aerzen service technician. Packaged units with high annual operating times may require more service calls for the re-lubrication interval of the electric motors.

AERZEN has included automatic re-lubrication devices in the After Sales Service Programme, in order to offer a solution to the users. These systems are driven by electric motors; the dispensers are provided with the necessary power supply by an integrated removable battery which guarantees an operational period of at least 12 months. Cartridges for the dispensers are available in 3 different sizes and various types of lubrication. The devices can be applied at temperatures from 10 °C to +60 °C. Thanks to corresponding programming, the dispensed quantity can be very accurately dosed and adjusted to the requirements of the electric motor. Therefore, an efficient and safe lubrication without downtime is guaranteed. In this way it can be ensured that the system is permanently available.

Retro-fitting of new AERZEN machine lubrication devices is also possible for existing standard motors.



Cartridges in three sizes and types of grease are available for the dispensers.

New size Delta Hybrid D 152

The new and successful rotary lobe compressor range Delta Hybrid made by AERZEN has now been extended with the addition of a unit of a new size. Customers can select from an extensive range the optimal unit for their application. Delta Hybrid is a synergy of blower and compressor technology, and offers completely new possibilities in overpressure and negative pressure generation of air and neutral gases by combining the technical advantages of both concepts.

With 16 sizes in all, the Delta Hybrid units now cover intake volume flows of 110 m³/h to 9,000 m³/h and overpressures up to 1,500 mbar. The new sizes D 152 S and D 152 H are used in the upper volume flow range of from 2,400 to 9,000 m³/h with driving powers of up to 400 kW.

The new size is designed for the upper volume flow range.



Questions, Suggestions, Ideas?

We are looking forward to all your queries, comments and suggestions on our customer journal and we are at your disposal for further information on Aerzen products and services. Give us a visit on our website:

www.aerzen.com/news

We are looking forward to your feedback.

New service station for Aerzen Polska

The Aerzen subsidiary in Poland, Aerzen Polska, officially inaugurated its new service station at the end of last year. After extensive renovation of its spacious, newly acquired building in Katowice, all Aerzen blowers situated in Poland can now be maintained and repaired there. Three new crane systems with a load capacity of up to 10,000 kilograms provide a better and more extensive scope of service. The service team, under the leadership of Przemyslaw Tomczak, has grown to 29 employees.

At the official opening ceremony, Aerzen Polska welcomed about 160 customers and guests, besides the Aerzen management and employees of the headquarters.

Aerzen Polska is already planning for further growth: The rental machinery business will be developed. Therefore, an agency of AIR will move in within a short time.



The new building in Katowice

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Turbo blowers made by AERZEN for base load, Delta Hybrids for peak load

Step by step towards the ideal sewage plant

Every sewage plant has two major cost elements: the sewage duty and the energy costs for the generation of process air for the aeration basins. A sewage plant in Kaiserslautern has succeeded in significantly reducing both cost elements in a three step process.



Thorsten Jung,
Manager Wastewater treatment plant
Kaiserslautern

By means of a combination of units made by AERZEN, the energy efficiency of process air generation can be optimised considerably.

Thanks to the reduced sewage duty resulting from basic changes to the aeration basins in 2008, modification costs of € 1.3 million were amortised after only three years. Replacement of the two existing turbo compressors with two new Aerzen rotary lobe compressors of series Delta Hybrid, led to an additional energy saving of approximately 13 % of process air generation. Since then, the entire energy consumption per month has been reduced from approximately 250,000 kWh to only 140,000 kWh (see also COM. PRESS 3/2011). This shows that the energy efficiency of process air generation can be improved still further by the replacement of other old turbo compressors – however, this time with turbo blowers of the new AERZEN series ‘AT Turbo Generation 5’ provided with air bearings.

Appropriate unit

An intensive examination of the frequencies of required quantities in basins 1 and 2 had shown that replacement of the large turbo compressors used (delivery volume 10,000 Nm³/h) with a new unit which can meet these demands, will lead to further energy savings. At the end of 2012 they decided for the new turbo blowers made by AERZEN. This unit (delivery volume 6,000 Nm³/h) covered the most frequent

operational range of between 5,000 and 6,000 Nm³/h on its own. For lowload operation below 4,100 Nm³/h they used the Aerzen rotary lobe compressor series Delta Hybrid which had already been installed in 2010. In case of a requirement of more than 6,000 Nm³/h, both units work simultaneously.

Ideal combination

With the new ‘AT-turbo Generation 5’ blowers AERZEN has realised the production of process air for biologically working sewage plants, offering the highest possible energy efficiency and security of supply. As a rule, the process air requirement of a sewage plant can only be satisfied using a combination of various machine types with various capacities, which can be defined as ideal base and peak load units due to their construction features and performance ranges. The physical advantages of turbo machinery – high energy efficiency of the design – can be perfectly combined with the advantages of rotary piston machines – high controllability and good efficiency in part load operation. Here, the units of the new controllable turbo blowers prove to be the ideal base load generators. As optimal generators of peak and low load requirement AERZEN supplies the controllable positive displacement blowers series Delta

View onto the compressor station with turbo compressor from AERZEN, an old turbo compressor, two rotary lobe compressors Delta Hybrid from AERZEN and two further old turbo compressors (from front)



Blower and the controllable rotary lobe compressors series Delta Hybrid.

Additional energy savings

“It is a fact that the energy efficiency of the process air generation is continuously optimised”, explained sewage plant manager Thorsten Jung in January 2014, referring to the data already available from the field test and to calculations on the basis of the data from the combination of AERZEN units presently used for basins 1 and 2. The two Aerzen Delta Hybrid rotary lobe compressors, which have been available since 2010, and which, according to Thorsten Jung, have proved successful up to now, are kept available for all three basins as concurrently working redundancy units. But they are also planning to use an additional Delta Hybrid unit in basins 1 and 2 for covering low load requirements. Previous experience has shown that the planned concept will lead to an annual saving in energy costs of around € 60,000. In addition, due to operating only new units, maintenance costs will reduce by about € 15,000. The operators therefore expect a payback period of at most five years.

Meanwhile, other sewage treatment plant operators are interested in the new concept operating in Kaiserslautern and the relevant positive experiences.



View onto the three activated aeration basins



Compressor hall



Turbo compressor from AERZEN