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In the Wansdorf sewage plant in the northwest of Berlin among others an AERZEN turbo blower type AT 400-0.8 ensures the required oxygen.

## Berliner Luft (The Berlin Air)

**AERZEN TURBO convinces with the new concept for oxygen introduction at Wansdorf sewage plant**

In the mechanical and biological sewage treatment plant at Wansdorf, near Berlin, an old Turbo blower was exchanged with an AERZEN product of the new series AT Turbo "Generation 5". What started out as a test, has, based on the positive experiences that followed, now become an integral part of the plant.

**T**he company operating the Wansdorf sewage plant, which was completed in 1998, is a co-operation between Berliner Wasserbetriebe, four municipal authorities and a special-purpose association in Brandenburg. More than half of the waste water purified in Wansdorf comes from Brandenburg, and the rest comes from Berlin. The plant was designed for a population equivalent of 200,000. As the waste water being purified is mainly communal, plus an additional quantity of industrial waste water, the volume of water being purified has a pollution load which corresponds to a population equivalent between 300,000 and 320,000. The maximum capacity of the sewage plant is 40,000 cubic metres of waste water every day.

Until then, the oxygen for the aeration basin had been generated by three turbo compressors, supplied by a company now owned by a German concern.

### Practical experience provided the proof

However, in March 2013, permanent and costly maintenance and repairs led to an exchange of the old compressor for an AERZEN Turbo. "The old units were compressors with integrated inlet and outlet guide vanes", explains Dipl.-Ing. Uwe Klau-ditz, an employee of Berliner Wasserbetriebe and technical operations manager of Wansdorf sewage plant. "This required extensive technology and very special knowledge for maintenance. Accordingly, the costs for maintenance work and over-haul were high. We absolutely wanted to

end this unsatisfactory situation." So they decided to check with the Turbo blower made available by AERZEN, the suitability of the new Generation 5 series under practical conditions. It is a decision they did not regret, and it was the test that convinced them: "We immediately used the packaged unit via the integrated demand-dependent control in continuous operation. Following some subsequent improvements at the beginning of the test phase, the result for us was so positive that after one year we decided to purchase the test unit", says Klau-ditz.

### AT Turbo for the base load

Currently, the new AERZEN turbo blower operates autonomously via



Axel Swoboda,  
Managing Director Wansdorf sewage plant

AERZEN really co-operated 'cleanly'.  
Therefore concerning this investment  
we absolutely feel on the safe side.

Dear Readers,



Rainer Lübbecke,  
Head of Process  
Gas Division

Do you share our view? A look at the calendar, and we shake our heads in disbelief: did we not just store the Christmas decorations on the shelves?

The year ending was a very special one for AERZEN: not many medium-sized private companies can look back on a 150 years success story. The events which took place to mark this very special birthday have surely played their part,

so that time has passed in a flash. During the festivities with customers and employees, as well as the Open Day, we were pleased to welcome around 10,000 visitors.

In addition, the construction of the new office building and the logistics hall point the way to a successful future.

Furthermore, in this edition you can read about the Turbo, the latest addition to the product range, as well as about the rental machines of our subsidiary AIR.

Enjoy the latest issue of AERZEN COM.PRESS and we wish you a pleasant Advent Season

## Insights into AERZEN's world

On the occasion of the company's 150th anniversary, AERZEN hosted an Open Day on 20th September. The young, the old, relatives and friends of staff, partners of AERZEN and other guests interested in the company all came. The flow of visitors started in the morning and did not stop until late afternoon. All in all, 5,600 guests took the opportunity to experience an informative and exciting day with and at AERZEN. This was a significantly higher number of guests than came to the last such event in 2004.



The historic spots and the exhibits in the new production centre met with a great response.

## ATEX-compliant version of ASP oil demister

AERZEN SPECIAL PRODUCTS BV in the Netherlands has developed an ATEX-design of its oil demister. ATEX is the name of a European directive for devices and protection systems, used in potentially explosive atmospheres. The ATEX-conformity, referring to gas and dust, has been tested and certified by DEKRA (a leading audit company in Europe).

For the ATEX-design, several components of the standard oil demister were modified: Not only were the filter mats replaced with a more conductive stainless steel version, but due to the increased weight the entire drum was replaced as well. Furthermore, all the bolts were provided with special spacing collars.



ATEX-oil demister from AERZEN SPECIAL PRODUCTS BV

## Clean air for Durango

With a total investment of EUR 1.6 million, the Mexican city of Durango is equipping its 18 years old sewage works with a new ventilation system. This is the first step in a large scale project for improving the air and consequently the quality of life, for people in more than 100 villages in the region as it rapidly develops.

In addition to the unit, AERZEN México is providing two Turbo AT 400-0.8T which will make an important contribution - they are extremely energy efficient and low in maintenance making them unique in the whole of Latin America.

Workshop concerning the new Turbo packaged units at the Durango wastewater treatment plant.



its own control system; in future it is planned to be integrated as base load blower into the overriding, pressure-dependent control system of the complete station. Then the two remaining units with demand-dependent capacity will cover the peak demand.

Nowadays there are many good arguments for turbo blowers in biologically working large-scale sewage plants: the AERZEN compressor system works very reliably, offers high energy efficiency, distinguishes itself by high conveying volumes and offers sufficient maximum pressure of up to 1.0 bar.

The new Aerzen AT-turbo blowers are driven by high-speed permanent magnetic motors (PM-motors) and may be adjusted via a frequency converter without additional mechanical adjusting devices infinitely variable between 40% and 100% to fluctuating

air needs. In the absolutely oil-free working units the only medium to be compressed in these units is the air that is used for the bearing of the shaft and for cooling the system. The new AT-series "Generation 5" made by AERZEN works with a corrosion-resistant and robust impeller made of stainless steel. Its high strength makes reduced wall thicknesses possible, offers better aerodynamics and considerably improved efficiency. The especially manufactured frequency converter also contributes to this improved efficiency. Due to permanent monitoring in case of unforeseen pressure fluctuations it avoids an uncontrolled shut-down of the machine to the surge limit.

### Higher safety, lower costs

According to Managing Director Axel Swoboda, the new AERZEN turbo blower in Wansdorf makes a significant contribution

to the legally conformant operation of the sewage plant - thanks to a stabilisation of the stipulated inflow values of the purified waste water into the open water.

The energy consumption of the blower station, by far the biggest energy consumer at Wansdorf sewage plant, cannot be recorded separately. But since the commissioning of the AERZEN unit the expenditure on energy for the entire sewage plant has reduced considerably compared with previous years. Klauditz is sure that this positive development is mainly due to the high energy-efficiency of the new Aerzen Turbo blower. "Also, as far as energy costs are concerned, with AERZEN we are obviously on the safe side", emphasizes Klauditz. Therefore, based on their positive experiences, in case of further investments being made into oxygen generation, they will contact AERZEN again immediately. ○

Initially, the AERZEN turbo blower was made available free of charge for a field test. One year later, it was taken over by the sewage plant.



## Maintenance 2015 in Dortmund and Stuttgart

# Maintenance and repairs - a dual solution

The "Maintenance 2015" fair will again provide an extensive view about industrial maintenance. This will take place on 25th and 26th February in Dortmund, and on 29th and 30th April in Stuttgart. Of course, AERZEN'S After Sales team will be there too.

Once again, various exhibitors have presented at this year's events the entire scope of maintenance, from inspection, via maintenance, to repairs. Therefore, industrial users received a comprehensive overview, irrespective of their sector, and detailed information on

how to optimise their processes, in order to achieve efficient and trouble-free production. Besides products and solutions, services were also presented at the fair. Various presentations and short expert lectures from experts about current topics rounded off the programme.

As in previous years, AERZEN After Sales presented its various products and services, such as machine diagnosis, service kits, service contracts and rental services at both fairs.

The benefit for customers is that they have access to a wide range of information, across all industries, all in one place. For free fair tickets, please visit: [www.aerzener.de/Aktuelles/Messen/Karten-bestellen](http://www.aerzener.de/Aktuelles/Messen/Karten-bestellen) ○





Stephan Seedorff,  
Product-responsible design engineer AERZEN

The innovative and successful products made by AERZEN are the results of methodological and technological basic research. With the option to integrate the frequency converter, we adapted the series Delta Blower, Delta Hybrid and Delta Screw sustainably.

150 years AERZEN, part 4 1998–2014

# Always keeping an eye on customers' needs

Again and again AERZEN manages to reinterpret the basic technology of its machines, to design them more efficiently and to adapt them in response to wide-ranging requests from customers.

**P**roduct innovations since the turn of the millennium include vacuum blowers with special canned motors introduced to the trade in **2005**. This series had the blower shaft integrated into the motor, and so was ideal for the requirements of the solar technology industry and for the production of flat screens.

In **2006**, AERZEN introduced the fifth generation of compact blowers Delta Blower. This was followed, in **2008**, by the fifth generation of compressor packaged units Delta Screw, and then, in **2009**, a new series of water-injected compressed air compressors was launched. The VMW series works with a closed water circuit, rather than with oil-injection. Clean water is injected into the compressor to cool and to lubricate the screw rotors. The major advantage for the customers: clean, oil-free and energy-efficient compressed air as well as reduced maintenance costs.

**Delta Hybrid: the world's first rotary lobe compressor**

A particular highlight was the market introduction of the world's first series of rotary lobe compressors at the world's biggest environmental fair, IFAT, in Munich in **2010**. The Delta Hybrid series incorporates the best features of blower and compressor technology, and offers new possibilities

for the generation of negative pressure and overpressure. With seven patents, or patent applications, Delta Hybrid leads the competition in introducing innovations in the field of compressor technology. It is among the most efficient machines for intake volume flows in the wide performance range between 110 and 9,000 cubic metres per hour.

The fact that AERZEN includes more and more efficient products in its production programme is highlighted by the development of an electronic counter. Hence, since **2010** all AERZEN Gas Meters from type G 40 to G 4,000 are prepared for the digital age. To measure the consumption of natural gas as accurately as possible, the counter converts the rotary movement of its piston into an electronic signal, which is then transmitted automatically to the energy supply companies. The new electronic counters are designed so that rotary piston gas meters with mechanical counters can be retrofitted without any problems.

**Turbo as supplement for the waste water industry**

For the first time in the company's history, a production plant for major components was established abroad with the addition of the Aerzen Turbo subsidiary in **2011** in South Korea. This had been preceded by a co-operation with the Korean hi-tech com-

Modern Times: Since its market launch in 2010, the innovative Delta Hybrid rotary lobe compressor is manufactured in the new production centre.



AERZEN convinces, as its machines run efficiently and free from faults and maintenance for a long period of time.

pany KTurbo, which was the first manufacturer of a speed-controlled turbo blower with air foil bearings in 2003. As turbo machines are a supplement to positive displacement blowers, particularly in the waste water industry, AERZEN had been looking for a way to include this product in the delivery programme.

First of all, in May 2011, AERZEN took over the technology as well as the worldwide sales rights from its South Korean partner. Five months later, production started. The turbo blowers for high volume flows, manufactured at Aerzen Turbo in Korea, are an important supplement to AERZEN positive displacement blowers and screw compressors. Aerzen Turbo is not only a production site, but is also one of three turbo competence centres dealing with sales, service and locally packaged unit construction - the others are the German subsidiary company RKR Gebläse und Verdichter GmbH in Rinteln and Aerzen USA Corporation.

With the latest developments, AERZEN shows again that the company understands the needs of its customers and takes these very seriously: energy efficiency is, and will continue to be, of the utmost importance, and AERZEN is therefore working continuously to improve the energy efficiency of its products.

**An eye on energy efficiency**

For example, Turbo blowers Generation 5, which generate process air particularly efficiently and were launched in the market in 2012, save energy. With Delta Blower, Delta Hybrid and Turbo, AERZEN offers its customers in the water and waste water sectors a unique range of products.

In **2014**, the new blower series Delta Blower Generation 5 was supplemented by a new E-Design, which gives energy savings of up to four per cent. The E-Design variant of the Delta Screw series, presented at this year's Powtech trade fair, also works with improved energy efficiency. ○



## 2005

AERZEN presents vacuum blowers with special canned motors.



## 2010

The Delta Hybrid rotary lobe compressor is a major success.



## 2014

Compressor packaged units series Delta Screw E-Design work with improved energy efficiency.



## 2006

AERZEN introduces the fifth generation of the Delta Blower compact blowers. Meanwhile the series is available in various sizes.



## 2012

Turbo blowers manufactured in Korea supplement the range of positive displacement blowers and screw compressors.

### 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](http://www.aerzen.com/news)

### Energy efficiency is an important issue in South Africa

Electra Mining Africa in Johannesburg is the biggest industrial exhibition on the continent. 35,000 visitors attended the fair which took place from 15th to 19th September. AERZEN was represented by Airgas Compressors at a modern and attractive fair stand. Airgas presented - energy-efficient solutions - made by AERZEN - for air and gas conveying. In this context, consider our Delta Hybrid D12S with frequency converter. The increased pressure range, the low noise level and the functionality of the AERtronic Controller specially impressed visitors from the waste water industry. An interactive touchscreen with 3D animation illustrated the advantages of the energy-saving Delta Hybrid.

Due to uncertain supply and rising costs of electricity, energy efficiency is of growing importance in South Africa.



Visitors were very much interested in the energy efficient solutions made by AERZEN. Thanks to the interactive touchscreen, further information could be obtained.

### IMPRINT

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AIR arranges for quickest possible transport of the rental units to the place of application.



### Aerzen International Rental (AIR)

## Rent first, then buy

Over the course of one's life, one acquires certain property - a bicycle, a car or even a house. It is often a difficult, and, depending on the amount of the investment, serious decision. Would it not make more sense to rent first of all instead of buying directly?

If, for example, I live in my house for some months on a rental basis, I can gather much experience, which perhaps saves me from making the wrong decision", says David Kearsley from AIR UK. An assessment which can also apply to industrial plant or machinery. "Again and again we find that customers change their opinion at the end of the rental period", Kearsley continues. "In the meantime they have gathered important experience and learnt from the process. Rental was exactly the right solution."

#### Plant optimisation

For example, one of our customers retrofitted his unit with a 22 kW-electric motor. At the end of the rental period, and following several tests, it was clear that:



David Kearsley,  
Aerzen International Rental UK and Ireland

Rental machines enable companies to gather important information which is necessary in order to make a well thought out and long-term purchasing decision.

an 11 kW-motor was entirely sufficient. So he finally decided on the smaller type, and consequently not only reduced the acquisition costs, but also the current expenses, the CO<sub>2</sub>-emissions and further spare parts costs considerably.

Of course, rental units are not only used for plant optimisation. They are also used as replacements in case of malfunctions or to provide temporary increases in capacity



Safely packed and ready for dispatch: AERZEN compressors and blowers from AIR

and efficiency. "Then time plays a major role", Kearsley knows. "Often the customer urgently needs a suitable solution, as otherwise the processes would be disrupted. In this case, time is money."

#### Quick help

This means that AIR not only needs to have suitable rental machines available, but it also needs to be able to load them and transport them to their customers as quickly as possible.

AIR offers 100 per cent oilfree screw compressors and blowers in the pressure ranges from 1 to 10 bar overpressure, as standard, with frequency converter control and lifting frame. Pippings, driers and coolers are also available, all of them for immediate shipment.

### 1st half of 2015

## Exhibition dates

In the first half of 2015 AERZEN will participate in the following fairs and trade exhibitions:

<b>NEWA</b> , Boston, MA, USA	25th-28th January 2015	<b>Maintenance Next</b> , Rotterdam, The Netherlands	21st-23rd April 2015
<b>BIOGAS</b> , Bremen, Germany	27th-29th January 2015	<b>Maintenance</b> , Stuttgart, Germany	29th/30th April 2015
<b>NYWEA</b> , NYC, NY, USA	2nd-4th February 2015	<b>Mining Copperbelt</b> , Kitwe, Zambia	5th/6th May 2015
<b>Maintenance</b> , Dortmund, Germany	25th/26th February 2015	<b>Schüttgut</b> , Basel, Switzerland	6th/7th May 2015
<b>Solids</b> , Antwerp, Belgium	11th/12th March 2015	<b>IE EXPO 2015</b> , Shanghai, China	6th-8th May 2015
<b>Aqua</b> , Gorinchem, The Netherlands	17th-19th March 2015	<b>OzWater 2015</b> , Adelaide, Australia	12th-14th May 2015
<b>Americana Water Show</b> , Montreal, Canada	17th-19th March 2015	<b>Pump Centre</b> , Telford, UK	14th May 2015
<b>Wasser</b> , Berlin, Germany	24th-27th March 2015	<b>IPACK-IMA</b> , Milano, Italy	19th-23rd May 2015
<b>Anuga Food Tech</b> , Cologne, Germany	24th-27th March 2015	<b>Achema</b> , Frankfurt, Germany	15th-19th June 2015
<b>Hannover Messe/Comvac</b> , Hannover, Germany	13th-17th April 2015	<b>EXPO APA 2015</b> , Bucuresti, Romania	15th-17th June 2015
<b>IWEX</b> , Birmingham, UK	21st-23rd April 2015		