



AERZEN

COM·PRESS

### Performance<sup>3</sup>

Ready for a new process of air efficiency?



### AERZEN E compressor

Delta Screw compressors work now even more energy efficiently



### 150 years AERZEN

Innovations "made in Aerzen"



## Dear Readers



Frank Glöckner,  
After Sales  
Field Service

We have experienced an eventful year so far in 2014 at AERZEN. Highlights include various fairs in the spring, the unforgettable 150th anniversary, construction of the new logistics hall and the commissioning of a new administration building. The best time of the year, the vacation period, has come and gone, and life has returned to normal.

New projects are foreseen at AERZEN, for example an Open Day. On 20th September, all interested persons can have a look at the new company buildings, participate in guided tours and get information about the latest AERZEN products. The children can let off steam on the pony rides, take part in a photo session, enjoy water sports and jump up and down on the bouncy castle. Young visitors can learn more about the apprenticeship professions. Refreshments for visitors will be served. Meanwhile, the expansion of the group and of the product portfolio continues. This edition reports on a new subsidiary in Peru, further worldwide dates of fairs, as well as an Areva certification – something which is very important for AERZEN.

But I do not want to reveal everything. I wish you all the best for the rest of 2014, have fun on the Open Day and enjoy reading the new edition of ComPress.

With best regards,

Frank Glöckner



Zellstoff Stendal produces 640,000 tons of pulp every year, an AERZEN Delta Hybrid Generation 5 supplies the required conveying air.

# Tested and approved to be the optimum

## AERZEN rotary lobe compressor supplies conveying air for pulp factory

Is it possible to transport humid wood chips by means of compressed air up to a height of 45 metres into a silo? Yes, it is! The new concept of Zellstoff Stendal GmbH provides proof of this. An AERZEN rotary lobe compressor of the new series Delta Hybrid Generation 5 supplies the compressed air for the pneumatic transport.

Zellstoff Stendal GmbH, which is part of the American-Canadian Mercer International Group, is the most up-to-date and biggest manufacturer of market pulp in Central Europe. Their factory in Arneburg with its 600 employees produced in 2013 about 640,000 tons of pulp from three million cubic metres of soft industrial wood. Furthermore, Zellstoff Stendal GmbH operates the biggest biomass power plant in Central Europe. With this, it covers all of its own demand for electricity and, in addition, feeds a large part into the public power supply system.

### Important link in the process chain

Many production steps are necessary from chopping the delivered logs to re-

ceiving the ready-to-use pulp. First, the pulp is cooked, and then it is fed via the pulp storage tank and the mixing container into the sorting area. Here, wood chips which are not macerated are sorted out and pneumatically conveyed back into the wood chips silo. Originally, the pneumatic transport of the wood chips was designed for a dry medium and achieved by means of a positive displace-

ment blower of a foreign manufacturer. The high humidity of the wood chips being transported resulted in increased wear, and many breakdowns of the blower. As the supply of spare parts for the foreign packaged unit became more and more difficult, a new integral solution was requested which needed to fulfil the following criteria:

- application of a new compressor made in Germany;
- modification of the piping in order to avoid the return flow of lye;
- intake of the compressor air via new piping directly from outside the building, and no longer from around the compressor where the air is filled with lye.

Dirk Würsig, Production engineer of Zellstoff Stendal

This Delta Hybrid rental unit has given us the opportunity to gain important experiences, essential for our decision on which machine we should buy. In addition, we could check operation parameters which had not been experienced up until now, so that we now operate with the highest energy efficiency.



## Advanced concept of work-space utilisation for PGD

As a result of the steady growth of AERZEN's Process Gas Division, their existing office space is bursting at the seams. In addition, the innovative and open working structures of the division need to be reflected in and supported by their office environment. Accordingly, a modern and sustainable working environment has been developed which will facilitate optimum communication between the teams. Project rooms and integrated meeting areas will help to encourage creativity and close cooperation.

AERZEN Process Gas Division is ideally equipped for the future with the variable space and utilisation concept in the new building. The attractive working environment will also help to attract suitably qualified personnel in the future.



Room for communication and creativity: the new working environment of the Process Gas Division

## Flood helper medal for factory fire brigade

In the middle of June 2013, the factory fire brigade of Aerzener Maschinenfabrik joined in to fight the flooding of the river Elbe. They worked on protecting the dyke in Zeetze, Amt Neuhaus, Lower Saxony.

During an awards ceremony on 4th July, the firefighters were awarded the flood medal of the federal state of Lower Saxony.



The flood helpers from Aerzen in action

## AERZEN awards promotion prize for best Bachelor-thesis

In July 2014, during an awards ceremony at the theatre of Hamelin four graduates of the "Weserbergland" High School in Hamelin, were awarded a promotion prize for the best bachelor-thesis, each with a purse of EUR 500.00. On this occasion, the promotion prize in the field of industrial engineering was donated by AERZEN. And as it turned out during the award to the winner, Jan Rosemeier, AERZEN not only manufactures the largest blower in the world, but it also handed over by far the biggest cheque.

Claudia Beckert, Head of Human Resources, handed over the prize



### First comes the test, then the order

Zellstoff Stendal did not want to leave anything to chance, and in 2012 integrated a rental unit of the AERZEN subsidiary Aerzen International Rental (AIR) into the system for about three months. Thanks to this rental machine, which was speed-controlled, the company could precisely ascertain in advance the ideal quantity of compressed air, the ideal operating pressure and the backup power for future production extensions. In this way, the ideal size of the new system for optimum fulfilment of demand and highest energy-efficiency could be precisely determined.

The test unit was integrated via flexible hoses into the existing concept so that the new unit could be installed without interruption of the conveying air generation, and commissioning could follow after some additional steel and piping work.

eration, and commissioning could follow after some additional steel and piping work.

### Delta Hybrid Generation 5

The new conveying-air packaged unit has also become a Delta Hybrid Generation 5. This packaged unit of type GM 60 S with a motor rating of 90 kilowatts, an intake volume flow of 43.6 cubic metres per minute and a discharge pressure of 0.785 bar is

not frequency-controlled but it operates with fixed speed. All system parameters could already be determined with the test unit of AIR.

Since then, the Delta Hybrid unit conveys 96,000 kg of wood chips with a volume weight of 600 kg/m<sup>3</sup> every day through piping of 129 mm diameter over a horizontal distance of 41 m and a height of 46 m - without interruption and in continuous operation.

Conveying air station of Zellstoff Stendal GmbH with the rotary lobe compressor of the new series Delta Hybrid Generation 5 supplied by AERZEN



Rental unit from AERZEN International Rental with six oil-free compressing AERZEN screw compressors for preliminary conveying air supply

## International Water Week Exhibition 2014

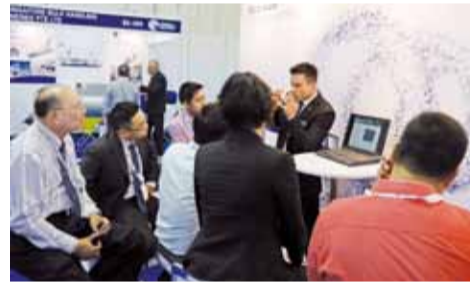
# Strong presence in Singapore

In June 2014, Aerzen Asia participated in the International Water Week Exhibition (SIWW) in Singapore, one of the biggest and most extensive water management trade fairs in the world.

The SIWW trade fair is part of a strategic programme of the Government of Singapore for strengthening the water industry and the development of water technologies. On the one hand the country wants to fulfil its role as South East Asia's driving force for engineering and developing new technologies for water treatment, but on the other hand it does not have its own natural resources. Now, every two years the trade fair brings together stakeholders from the worldwide water industry to discuss business models, present current water technologies and thus seek to drive continuing innovation.

More than 19,000 participants from 104 countries/regions visited this year's event. They were able to get information at the stands of the 750 companies participating and at 16 special international stands.

Aerzen Asia had not participated in the SIWW for several years, but with its large exhibition area, our subsidiary made a powerful and impressive "comeback", and this had the desired effect on both visitors and competitors. The AERZEN Turbo blowers, Delta Hybrid and Delta Blower, exhibited as complete packaged units or as stages, as real machines or sectional models, explained the Performance<sup>3</sup> concept and despite the exhibition only being on for a few days attracted numerous visitors to the stand. These included both existing



During the trade fair the partners were trained concerning Aerzen Turbo and Delta Hybrid



At the stand single stages ...

customers and potential customers, coming from countries such as China, Taiwan, India, Australia, Vietnam and even Iran. As Aerzen Asia colleagues at the exhibition came from the regional sales organisations, most of the discussions could be

held in the mother tongues of visitors to the stand.

Aerzen Asia established several new co-operations with plant manufacturers, system providers and consulting firms, and was able to sell some turbo blowers.



... as well as complete packaged units were exhibited.

TRADE FAIR SPECIAL

High Process-Performance  
with AERZEN Delta Hybrid, Delta  
Screw and Delta Blower.

Performance<sup>3</sup>

## Ready for a new level of process air efficiency?

To transport bulk goods pneumatically - from dust particles to tennis-ball-sized objects, quickly, carefully and at the lowest cost, is - a task for experts and specialists in the field. AERZEN solves the transport problem by offering a new level of process air efficiency.

**A**round 90 percent of the life cycle costs of a compressor are energy costs. Consequently, the best approach for the company, and for better eco-balance, is to reduce energy consumption. AERZEN meets this challenge with its oil-free compressing positive displacement blowers, rotary piston compressors and screw compressors - up to 15 percent savings in energy are possible, allowing for a return on investment, being achieved after just two years, depending on volume flows and pressures.

### Delta Blower: the robust endurance runner

This unit of AERZEN brings together 150 years of experience as a global market leader in blower development. And it is more innovative than ever. The new E design AERZEN Positive Displacement Blowers can reduce energy demand by up to 4 percent, depending on volume flow and differential pressure. AERZEN has packed a variety of

innovations into the latest series, for blower power with oil-free conveyance of air and neutral gases: these include a large volume flow range of 30 to 15,000 cubic metres per hour, reduced life cycle costs, simpler handling and quieter operation. What remains unchanged is that this blower class is extremely robust, highly reliable and extraordinarily durable

### Delta Hybrid: the best of both worlds

Delta Hybrid is the world's first series of rotary piston compressors, and it remains unique in this field, combining the advantages of blower and compressor technology in one system. It offers completely new possibilities in negative and overpressure production. With seven patents and patent applications, Delta Hybrid not only provide the most innovative solutions in compressor technology, but with energy-saving potential of up to 15 percent, it is also the most efficient. In addition, the pressure range

has been extended to 1,500 mbar overpressure and up to -700 mbar negative pressure compared with conventional compressors.

### Delta Screw: strong types in suitable sizes

The compressor units Delta Screw are designed for the compression of air, nitrogen and other neutral gases. However, their great strength is not just evident in these applications: with their extraordinary versatility, they can provide ideal solutions for numerous other applications - such as, in the case of special gases, in vacuum operation or pre-admission applications. With seven sizes in volume flow range of 120 to 15,000 cubic metres per hour, AERZEN offers, by far, the largest product range on the market.

In addition, the successful series is further extended by directly coupled E compressors offering up to 6 percent energy saving, depending on pressure ratio and volume flow. In the pneumatic conveyance of inflammable and potentially explosive bulk goods, ignitable mixtures can be produced in the unit - for this reason AERZEN not only offers all unit components in corresponding ATEX design, but can also provide tailor-made solutions. ○

### AERZEN blowers for Taishan nuclear power plant

## China relies on Hi-tech made by AERZEN

AERZEN supplies a total of nine water vapour blowers for the "Taishan Phase I" nuclear power plant in the Chinese Province of Guangdong - one of the biggest individual orders in the company's history.

**T**aishan Nuclear Power Joint Venture Co., Ltd., a Joint Venture of China Guangdong Nuclear Power Holding Corporation (CGNPC) and Électricité de France (EDF), is responsible for the financing, construction and operation of the nuclear power plant. Construction started in 2009 and commissioning is scheduled for 2015 - a comparably short realisation period for this segment, something which the customer's project management team proudly refers to.

The two power plant blocks, each with a nominal capacity of 1,750 megawatts, are based on the latest generation of the European pressurised water reactor (Areva EPR). The turbines for power generation are supplied by Alstom and Dongfang.

The costs for the entire project amount to about eight billion Euros.

In a project of such magnitude, AERZEN's delivery share, amounting to eight million Euros, may seem comparatively "moderate". "But this order is a visiting card of the performance of our company", emphasizes Rainer Lübbecke, head of Process Gas Division. "The extremely high quality standards, and also the documentation required for such a project, illustrate the wide range of AERZEN products." For example, during the processing phase, about 13,500 documents were prepared, checked and finally released by the customer and the German TÜV.

AERZEN received the order and consequently the "starting signal" in August

2010. Five of the nine water vapour blowers type GRa 18.f16x for nuclear power plant block 1 were already dispatched in June. The remaining packaged units will be completed and supplied in the fourth quarter of this year. ○

The huge nuclear power plant in Taishan is scheduled to start operations in 2015.



### Aerzen Andina - Peru S.A.C. established

A new organisational unit of AERZEN Group, Aerzen Peru S.A.C., was established in April 2014 in the Peruvian capital Lima.

Having exported to Peru from Aerzen Germany and Aerzen Andina Colombia for many years, the time has come to establish an after-sales organisation in the country itself. This will allow the company to better assist its customers in this market, through offering local service and support. It is also planned to establish a sales and service organisation in 2015.

Ricardo Castillo, General Manager of Aerzen Andina - Colombia, will assume control of the new organisational unit in Lima.



Ricardo Castillo

### New Managing director at Aerzen Austria



Martin Barger

Martin Barger took over the management of Aerzen Austria on 1st April 2014. Barger, who has been working at Aerezner Maschinenfabrik since early 2014, replaced longtime Managing Director, Ewald Mayrl, who has retired after many years of loyal service.

The 32-year-old mechanical engineer has several years of experience in the Industrial Equipment and Facilities Division.

### Successful Areva recertification

At the end of February 2014, AERZEN passed a two-day recertification audit for the customer Areva, a leader in nuclear technology. This was achieved, not as in previous years in accordance with KTA 1401-regulations, but in accordance with NSQ-100. These regulations were published by the Nuclear Quality Standard Association (NSQA) in 2011, are based on ISO 9001 and are internationally respected.

Due to the new requirements of the NSQ-100 regulations, AERZEN awaited the audit with excitement. Finally the auditors confirmed that AERZEN is well positioned even for the modified general conditions. In some aspects potential for improvement was identified, and recommendations were duly implemented to the greatest possible extent. We are thus looking forward to the next interesting and challenging orders in nuclear power plant construction.

Aerzen passed the re-auditing to become an Areva supplier.



## Dragon boat team competes abroad

Members of Aerzen's dragon boat team have been talking this summer not only about the traditional domestic regatta, but also for the first time about competing abroad: the team participated in the Dragon Boat Cup in Vienna in the middle of June as the only non-Austrian team and achieved a creditable fourth place. And no wonder – the team had active and loud support from an accompanying group of fans from Aerzen as well as from domestic fans of Aerzen Austria.



"Delta Crew" in Vienna

## Turbo Business under new management



Stephan Brand

In July, Stephan Brand assumed the position Director Turbo Business in addition to his responsibilities as International Marketing Manager.

Brand has worked for Aerzener Maschinenfabrik since 1995, and has

been in various positions in sales and marketing. As Director Turbo Business, he is responsible for the establishment of the worldwide turbo business, including production, development, finances, sales and service. Brand will coordinate the activities of AERZEN Turbo organisations worldwide.

## 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!

# Delta Screw now even more energy efficient

AERZEN presents for the first time the completely revised compressor packages at the PowTech in Nuremberg from 30th September to 1st October 2014. These compressor packages belong to series Delta Screw E design which work even more energy efficiently than previous designs.

This new series of E compressors includes four sizes in the volume flow range from 900 to 6,700 m<sup>3</sup> per second and drive capacities from 55 to 630 kilowatts. The single stage, oil-free screw (type) compressors are being offered with 2.0 bar and 3.5 bar differential pressure. Energy savings of up to 6% can be achieved, depending on the pressure ratio or the volume flow - which represents impressive performance in this category. Further revised types of the Delta Screw series will follow, step-by-step.

### Constructive optimisations

The energy-saving improvements are the result of many constructive optimisations. Instead of suctioning the air to be compressed from inside the acoustic hood, cooler outside air is now sent through an intake channel directly to the intake filter. This improves the specific performance of the plant considerably. In addition, opti-

mised inflow channels and an innovative pressure-side silencer with improved fluid dynamics and no absorption materials, help minimise pressure loss significantly. They are the results of a considerable amount of research by AERZEN's development team. The silencer output has been reduced to less than 80 dB(A). Moreover, by using two compensators, the system is also 100 per cent stress-free. In future, this discharge side silencer will also be designed as a spark arrester according to ATEX Directive 137 for explosion proof plants (EU Directive 1999/92/EC).

Up to now, the fan for cooling the interior of the acoustic hood was positioned on the compressor shaft. From now on, the fan will be equipped with a separate electric motor. As a result, it can be made in a smaller size, positioned particularly efficiently, be controlled temperature-dependently, if necessary be operated in run-down, and be designed to save as much energy as

possible. The air for cooling the lubricating oil of the bearing is now fed in directly from outside via an inlet channel - a detail which also improves the economy of a compressor, just as any temperature reduction does.

### Flexible and economical

All Aerzen units are already provided with energy-saving IE3 motors, despite the fact that these will only be required by law from 2015. The flexible concept of series Delta Screw additionally permits customised special solutions, such as for special motors, acoustic hoods for special ambient conditions or special instrumentation. The series is easy to service and maintain. The service life of the lubricating oil for the bearing is 16,000 operating hours - this corresponds exactly with the maintenance intervals, which are also 16,000 operating hours, and is another positive development.



AERZEN Delta Screw in new E design

## Blower and After Sales Service for Siam Flour

# AERZEN captures Thailand's milling industry

Bangkok's flour mill Siam Flour, rich in tradition, has been relying on AERZEN for 30 years. It is important that friction takes place only between the millstones and not during the processes!

Siam Flour is one of the oldest mills in Thailand and produces more than 250 tons of grain daily. Due to their design and reliability the company is a loyal user of AERZEN positive displacement blowers and they have already convinced other companies in the milling industry of the qualities of these blowers.

The former favourite of Siam Flour, the 2-lobe GMb15.10, is now being replaced by the more efficient 3-lobe AERZEN GM35s. This blower is more compact, with a higher running speed, and, with an acoustic hood, noise is well contained.

Until now, Siam Flour has been carrying out their own overhaul and repair of

the blowers, buying all original spare parts from the local authorised sales agent UniRoyal. Now the company is considering handing over the After Sales Service to AERZEN. UniRoyal is supporting Siam Flour in case of technical questions and inspects the blowers regularly by means of the AERZEN vibration detector.

In Thailand more than 1,000 AERZEN blowers and screw (type) compressors are in operation, in a rapidly increasing number of applications. UniRoyal and Aerzen Asia are confident that more and more customers will eventually take up the complete aftersales care package, which includes quick response, preventive maintenance such as vibration monitoring, overhaul and repair, standby blowers and exchange programmes.



Siam Flour Mill in Bangkok



Managing director Siam Flour Mill

AERZEN blowers are like workhorses - robust and reliable - so there will not be any unplanned downtime which can cost a lot of money.



Ingo Kammeyer, head of technical sales and product management

Delta Blower and Delta Screw blower and compressor solutions “made by AERZEN” set new standards again and again: both operator and application oriented.

In the production of screw compressor rotors AERZEN soon relied on CNC-controlled rotor milling machines.



150 years AERZEN, part 3 1987–1997

# Innovations “made in Aerzen”

With further significant new developments, AERZEN set standards worldwide in the 1980s and 1990s.

In 1987, with the three-lobe blowers, AERZEN introduced an important new product. These patented blowers for conveying large volumes of air, beginning at 3,000 cubic metres intake volume per hour, worked with a controlled pre-inlet particularly well in the low frequency range - they were quiet and operated with little vibrations. This allowed a considerable reduction in the sound absorption measures necessary for the blowers, and was an innovation in the global market. AERZEN set a new standard, which applies even now.

### Development boosted by Delta Blower

In the years which followed, AERZEN still relied on new, ground-breaking products. As AERZEN began to supply components for environmental engineering and therefore gained considerable experience in this field, the company was well prepared for this developing market. AERZEN supplied tailored machines for ventilating aeration basins in sewage plants, for desulphurisation of flue gas, for the degassing of landfill sites and for dust extraction systems and drinking water treatment plants. In 1994, the company started series production of the newly developed blower package Delta Blower. This was a product designed for a wide range of applications, including environmental protection.

The new series represented a development boost in the field of positive displacement blower packaged units. Instead of the two-lobe rotary pistons that were usual before, the Delta Blower had three-lobe pistons. Two cast-in channels in the blowers' cylinder allowed vibrations to be reduced at source. Furthermore, the new blower packages differentiated themselves by having automatic belt tensioning. This was achieved by means of a hinged motor mounting plate. So, with the new units suitable for oil-free conveying of air and neutral gases, AERZEN achieved a considerable noise reduction in the work process.

In AERZEN's range of products the series of packaged units with integrated vibration reduction soon prevailed. By 1999, 98 per cent of all positive displacement blower packaged units manufactured were Delta Blowers. Within a period of just five years AERZEN sold 10,000 Delta Blower packaged units.

### New compressor series Delta Screw

In the field of screw compressor manufacture, AERZEN continued to innovate. In 1996, the new compressor series Delta Screw was launched in the market, supplied as assembly group ready for connection. The compressor packages were

designed as modular kits and in the lower volume flow range relied on the belt-driven drive concept, similar to the blower series. The compressor-packaged units Delta Screw are completely tailored to practical demands. They are particularly suitable for dry and oil-free compression of air and neutral gases. The fields of application of the new series are numerous, and include, among others, pneumatic conveying of bulk material, aeration of sewage plants, vacuum generation in the glass and paper industry and ice inhibiting of sluices.

Just one year after the Delta Screw series, with the Variscrew, a new generation of refrigerating compressors was developed and manufactured. This series comprised a wide range of screw compressors for various fields of application in the ma-

rine and industrial refrigeration sectors. With a further-developed rotor profile and durable anti-friction bearings, these screw compressors were designed particularly for the refrigeration industry and were low-maintenance and economical to operate. With their modular construction, AERZEN could manufacture the new refrigeration compressors according to individual customer specifications. They were designed among others for use in the meat and poultry industry, in refrigerated and frozen meat warehouses, in dairies and breweries, in mine cooling, air-conditioning systems as well as in process cooling and for heat pumps.

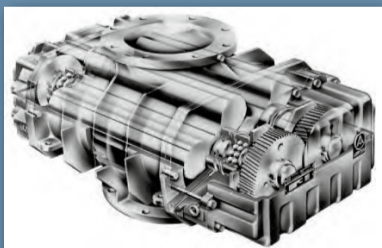
In our next edition you can read about the product innovations that followed in the ensuing years.



View into the assembly hall in 1990



In the environmental engineering field AERZEN began to supply components, e.g. positive displacement blowers type GMa 18.17 for the aeration of sewage basins.



# 1987

With the patented three-lobe blowers AERZEN presented a world first.



# 1990

As one of the first mechanical engineering companies in Germany, AERZEN introduces a quality management system.



# 1996

The new compressor series Delta Screw was the highlight of the year.



# 1989

On the occasion of the 125th anniversary of the company, Hasso Heller presented the 250,000th positive displacement blower.



# 1994

With the introduction of the three-lobe Delta Blower packaged units AERZEN was a huge step ahead of the market.



# 1997

Variscrew, the new generation of refrigerating compressors, was manufactured according to individual customer specifications.

## 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)

## Exhibition dates

In the fourth quarter of 2014, AERZEN will be participating in the following fairs and trade exhibitions:

- WEFTEC** New Orleans/USA  
27th September – 1st October 2014
- Industrial Processing** Utrecht/Netherlands  
30th September – 3rd October 2014
- VA-Mässan** Jönköping/Sweden  
30th September – 2nd October 2014
- POWTECH** Nuremberg/Germany  
30th September – 2nd October 2014
- GAT** Karlsruhe/Germany  
30th September – 1st October 2014
- EXPOQUÍMICA** Barcelona/Spain  
30th September – 3rd October 2014
- Water Scotland** Glasgow/Scotland  
8th October 2014
- Chillventa** Nuremberg/Germany  
14th – 16th October 2014
- H2O** Bologna/Italy  
22nd – 24th October 2014
- Resource Ireland Simmons Court** Dublin/Ireland  
22nd – 23rd October 2014
- Bulkex** Sydney/Australia  
25th – 27th October 2014
- PNCWA** Vancouver/Canada  
26th – 29th October 2014
- PTC** Shanghai/China  
27th – 30th October 2014
- Wasma** Moscow/Russia  
28th – 30th October 2014
- Seminar about VMW** Shanghai/China  
31st October 2014
- ANEAS** Mexico City/Mexico  
1st November 2014
- Bio Energy Decentral** Hanover/Germany  
11th – 14th November 2014
- Pollutec** Lyon/France  
2nd – 5th December 2014

## IMPRINT

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Concrete circulation basin with integrated water treatment for raising salmon trout at the Winkelmann farm in Wietzendorf

## Oil-free generation of oxygen at fish farm

# For lively fish in the water

For the basic supply of oxygen to their trout breeding tanks, Messrs. Winkelmann has exclusively used AERZEN positive displacement blowers for the last twelve years, with these 18 machines compressing absolutely oil-free.

For 30 years, trout have been cultivated at the Winkelmann farm in Wietzendorf (Lower Saxony), southeast of the city of Soltau. What started out as a hobby ultimately became a business. Since then, the main goal has been the preparation of fish eggs, caviar (roe).

The female trout are brought up in concrete semi-circulating basins and slaughtered after 26 to 29 months as salmon trout. The annual fishing quota is 650 - 700 tons. The company itself sells the caviar throughout the world. The fresh fish goes to processors.

### “Spa area” for fishes

“A fail-safe supply of oxygen is mandatory for our breeding tanks”, explains junior manager Stephan Winkelmann. This supply ensures not only the oxygen vital for the fish to breathe, but also a constant circular flow of water. The fish constantly need to swim against the flow of water to remain active.

For an optimal supply, approximately 7 kilogrammes of pure oxygen dissolved in the water is required per tank each hour. The corresponding compressed air requirement is approximately 10 - 12 cubic metres per minute per tank. Winkelmann covers this requirement exclusively with com-



Hermann Winkelmann, senior manager

We place the greatest value on the reliability of our oxygen producers. AERZEN positive displacement blowers have proven reliability and therefore enjoy special preference. Ultimately, we have always decided to choose a positive displacement blower from AERZEN.

pressed air produced by AERZEN’s positive displacement blowers. Only in the case of higher temperatures does additional pure oxygen need to be provided via surface aeration or ceramic diffusers.

### Highest security of supply

“Since the start of the intensive breeding, we produce the required oxygen exclusively with AERZEN positive displacement blowers”, says senior manager, Hermann Winkelmann. Even now, the first units installed in containers operate continuously around the clock - without showing any signs of wear. In parallel with the extension of the breeding tank, nine further machines of the current series Delta Blower “Generation 5” work in a central location at Winkelmann. Seven units of type GM 25 S are driven electrically and two machines of type GM 60 S have diesel motors. At the

same time as the commissioning of the circular tank in mid-2014, three additional electrically-driven units and one diesel-powered unit were installed. In order to be well prepared in case of a longer power failure, the company also has two emergency generators.

### ... and energy efficiency

“Besides the high security of supply, there is one further argument in favour of AERZEN positive displacement blowers”, says Winkelmann. “Thanks to these machines we produce the oxygen with optimal energy efficiency. This is a very important consideration for us, as energy costs are a principal component within our overall profitability calculation. Only when the entire company works economically, it is possible for us to sell our products successfully in the market.”

Central oxygen station at the Winkelmann farm with nine electrically-driven positive displacement blowers series Delta Blower Generation 5 made by AERZEN and two of the above machines driven by diesel engines



Oxygen entry into a circulation basin