



AERZEN COM·PRESS

AERZEN After-Sales Service

Reliable even in times of crisis



AERprogress

Added value through digitisation



Digital control technology

AERtronic newly developed



Dear Readers,



Sascha Adam,
Chief Financial
Officer AERZEN
Deutschland

In these challenging times of the coronavirus pandemic, AERZEN remains focused on keeping in close contact with our customers, despite the required social distancing rules.

Accordingly, we in the AERZEN Group have developed new digital media solutions to help stay in contact with you, our customers. One of these innovations is the creation of virtual tours of our trade fair booth, to which we would like to invite you. Together with our

sales representatives you can walk around the booth, virtually, and hear all the latest news about our products and new additions to our portfolio.

We have also developed a number of web seminars specifically on the subject of energy efficiency in the field of wastewater technology. In addition, using an AERaudit analyses as an example, and working closely with you, our customers, there are considerable savings opportunities to be had by implementing intelligent AERZEN solutions in the product network.

Keyword digitisation: with AERprogress we have created an interesting solution for numerous operators. Through interaction with the newly developed AERtronic, the running times can be better monitored to maximise efficiency and for assembly processes of your machinery and thus downtimes due to failure can be avoided and the service life can be extended. Let's stay in touch!

I hope you will enjoy reading this issue.

Cordially yours,



With the combination of two Turbo blowers and one screw blower the wastewater treatment plant Bergheim-Kenten covers the air demand of the biology particularly efficiently.

The Bergheim-Kenten wastewater treatment plant was able to reduce its energy consumption by a quarter with the new technology. Prior to the modernisation, a comprehensive examination of the existing load profiles, and the necessary volume flow requirement was carried out.

One-fifth of energy saved in the aeration process

After modernisation, the Bergheim wastewater treatment plant pays €60,000 less electricity per year

Power consumption is reduced by 20 percent and, thus, a return on investment of just two to three years: the investment in new blower technology for the aeration is quickly paying off for the Ertftverband. In 2019, the water and wastewater association started up a blower combination, consisting of two turbos and one rotary lobe compressor from AERZEN in the wastewater treatment plant Bergheim-Kenten, Germany. The constellation was the result of a comprehensive process air analysis as part of an AERaudit.

It was a suggestion for improvement made by the company's own staff, which in future will ensure far-reaching energy savings at the Bergheim-Kenten wastewater treatment plant. When due to age the purchase of new blower technology was in the house, the team of wastewater master Ralf Herde and production engineer Günter Breuer used the opportunity to make an AERaudit together with AERZEN. The association, thus, abandoned its original plan to replace the old assemblies only with comparable, more recent technology. "We are tackling the heart of the waste-

water treatment plant - the air supply for biology," says Günter Breuer, explaining the value of the modernisation. In terms of equipment, this is now a combination of two turbo blowers of type AT 150-0.85 and one rotary lobe compressor of the type Delta Hybrid D62S.

This combination was the result of AERaudit, which in turn was based on a three-week measurement period. The parameters determined and put into context over time included mass flows, temperatures of media and the environment, differential pressures, power consumption and the associated voltages and currents.

Here, AERZEN uses precise measuring transducers on all three phases with regard to the load capacity of the data, for example, upstream of the frequency inverter of the assemblies. A volume flow measurement was installed at the same time. The performance measurement revealed that with a new machine design, before modernisation, the average energy consumption of 3,590 kWh per day can be reduced to theoretically 2,232 kWh. Incidentally, the forecast, which was then calculated by adding some correction aspects and 20 percent, proved to be reliable in the further course of the project. The actual figures are on the expected performance curve.

Especially with the base load on the ideal line

Turbo, turbo, Delta Hybrid rotary lobe compressor: the triad of AERZEN covers today in an ideal way the air demand of the Bergheim-Kenten wastewater treatment plant. In concrete terms, ideal means running the machines in such a way that they provide air in the aeration





The two turbo blowers from AERZEN cover the basic load of the wastewater treatment plant. Each turbo blower delivers up to 5000 standard cubic metres.

AERsmart takes over the coordination of the blower combination. Wastewater treatment master Ralf Herde: "We ourselves have nothing to do with the regulation".



> process at the optimum operating point - i.e. maximum efficiency. In the course of the AERaudit inventory, the required air volume was 4,200 standard cubic metres per tank and hour. The wastewater treatment plant has two aeration tanks. The turbos are designed for 5,000 standard cubic metres and can, therefore, ideally handle the normal load in terms of energy. If demand is far below this level, the Delta Hybrid takes over and the turbos are disconnected as base load units. If maximum performance is required due to high outside temperatures and COD load (Chemical Oxygen Demand), all three assemblies together reach 13,000 standard cubic meters. "Our experience shows that we need a maximum of 12,000 at the top. With this machine constellation we are, therefore, on the safe side," says wastewater master Ralf Herde, reporting from experience.

Optimal energy supply to meet demand

Every load change in wastewater treatment results in a very different air re-

quirement. In technical implementation, this statement led to the Performance³ strategy. The machine portfolio of the Lower Saxony company forms the basis for selecting the appropriate equipment combination of positive displacement blower, rotary lobe compressor and turbo on the basis of measured load curves and their proportion over an operating period. The AERsmart control system regulates which assembly with which performance, together with whom or alone, provides sufficient air on the basis of the stored machine characteristics. In this way, AERZEN ensures that the air requirement of the aeration is always covered with the most energetically sensible technology - without losing sight of the wear and tear behaviour through constant switching on and off.

The efficient coordination of the combination is handled by AERsmart completely autonomously and independently of the process control level of the wastewater treatment plant. "We ourselves have noth-

ing to do with the regulation," says Ralf Herde happily. The wastewater master has been working on the 120,000 population equivalent plant for 20 years. This makes it the second largest of the Ertfverband, which operates further 35 plants and employs 500 people on its 1,900 square kilometre area. In addition, there is an area of another 2,300 square kilometres where the Ertfverband observes and researches the water management conditions in connection with opencast lignite mining. The area of responsibility, thus, extends from the Dutch border to the Rhine and from Neuss to Bad Münstereifel.

For Ertfverband, the Performance³ approach and the analysis of operational data with AERaudit are trend-setting. Plant engineer Günter Breuer is convinced that the results of the model experiment have the potential to continue to be used beyond the company's own supply area. "We are not a small company and maintain a close exchange of experience with neighbouring associations on a technical level." Away

from the technical possibilities of modern blower technology and the opportunities offered by integrated control system, Günter Breuer believes that the success of the modernisation is primarily due to the commitment of his team on site. "It's worth looking closely to find the big screws worth turning."

Efficiency is also a question of corporate culture

At the Bergheim Kenten wastewater treatment plant, the staff had largely completed the conversion themselves. This began with dismantling the old blowers, continued with the adaptation of pipes and air ducts and the laying of electrical connection lines. Finally, the team of wastewater master Ralf Herde also took over the integration of the new AERZEN blowers into the software of the wastewater treatment plant control. In this way, the association saved a further €60,000 to €100,000 compared to outsourcing, according to the suggestion for improvement mentioned at the beginning. Günter Breuer: "To think in systems is also a question of corporate culture. This has succeeded here. But everyone has to want and support this. I'm proud of my boys." ○

Supplements in the maximum and low volume flow rate range

AERZEN Delta Hybrid rotary lobe compressors optimised and extended with new sizes

In pneumatic applications or in municipal and industrial waste water treatment, the generation of process air is very energy-intensive. When operators use the right compressor for their process, they save energy. The extensive Delta Hybrid rotary lobe compressor series has therefore been further developed, optimised and supplemented by three sizes.

Since its successful introduction in 2010, the Delta Hybrid rotary lobe compressor series has been continuously expanded. With all in all 18 sizes the Delta Hybrid now cover volume flows of 110 m³/h up to 9,000 m³/h and drive power from 5.5 kW to 400 kW. The new Delta Hybrid D76S with a maximum volume flow of 4,580 m³/h and a drive power of 160 kW

The new Delta Hybrid D76S with a maximum volume flow of 4,580 m³/h and a drive power of 160 kW



closes the gap in the upper power range. In the low volume flow rate range, two further sizes complete the portfolio for an even finer gradation of the series. In addition to the new D19S with a maximum of 1,140 m³/h and 45 kW, the new size D29S with a maximum of 1,740 m³/h and 75 kW also joins the product range.

D76S, D29S and D19S operate in the standard pressure range. The models D76H and D76E were developed for an increased pressure range of 1.5 bar and the vacuum range to -700 mbar.

Further efficiency potentials

Plant manufacturers and operators not only benefit from the now finer tuning and the resulting better price/performance ratio, the entire series has also been further developed and optimised. In this way, further efficiency potentials could be tapped,

leading to increased energy efficiency of up to 5% per size.

AERZEN produces the optimised series or the new models in series from the middle of the year. At the same time, the further developed Delta Hybrid series will be equipped with the innovative AERtronic

machine control system for process monitoring and control. With the new machine control the series of AERZEN rotary lobe compressors has, depending on the version, a cloud interface, automatic emergency shutdown, a digital control instrument and a fault indicator. ○

The advantages of AERZEN Delta Hybrid rotary lobe compressors at a glance

- Significantly improved energy-efficiency by energy savings of up to 20 % compared to conventional units
- Extended fields of application with differential pressures of 1,500 mbar in the overpressure and -700 mbar in negative pressure
- Low maintenance- and service costs (operation from the front, oil level check from the outside even with the machine in operation, oil change intervals prolonged to 16,000 operating hours), reliability and durability
- Very high regulating range (25 - 100%) with best possible degrees of efficiency also in partial load operation
- Patented and robust bearing design
- Low compressed air discharge temperature thanks to excellent thermal budgets
- Compact design and side-by-side installation, low noise levels, suitable for outdoor installation
- ATEX certification as well as class 0 certification acc. to ISO 8573 for oil-free operation
- No use of absorption material in discharge silencer, consequently no contamination of downstream systems
- Belt drive for ideal design of the volume flow (automatic belt tension by hinged motor mounting plate ensures low maintenance and high reliability)
- Tailor-made solutions through modular construction system, various modifications and options

AERZEN After-Sales Service

A reliable partner, even in times of crisis

For many of our customers, blower and compressor technology is an indispensable component of a complete system that must be maintained and kept in operation under all circumstances. It is thus essential for us to offer a fast and responsive service, and thus facilitate the maintenance of the system-relevant industrial sectors.



Even during the Coronavirus crisis, AERZEN's worldwide After-Sales Service has continued.

Our After-Sales Service was and still is operational worldwide, even with the Coronavirus pandemic going on, helping our customers to avoid downtimes or to make good use of production interruptions. Some services have proven to be particularly effective.

Revision of blower and compressor stages

Particularly in times of crisis, a reliable partner is immensely important. Many customers took the opportunity to put their machinery to the test. AERZEN was there as a competent partner in every phase of the lockdown.

Original spare parts and service kits

Even when a lockdown is in force, system-relevant equipment must remain in operation. You save time, money and minimise machine downtimes. Carefully as-

sembled kits containing exactly the parts needed for maintenance and repair also ensure that an aeration system functions properly. At AERZEN, all supply chains have remained intact, as all spare parts are in stock, in order to guarantee punctual delivery.

AERZEN Rental packages

There are some completely unforeseeable situations for which one simply cannot prepare. Covid-19 has turned our lives upside down and things have become unpredictable. However, with AERZEN Rental, you have a reliable partner at your side; we have stood ready 24/7 during the Coronavirus crisis, and, in emergencies, guaranteeing you the corresponding security of supply at all times. AERZEN Rental offers fast solutions for 100% oil-free air. Our fleet of rental machines includes a large

number of immediately usable blowers, turbo blowers and compressors of various power and pressure ranges. ○

The most important contacts for you

AERZEN Service Infoline

Telephone: +0700 49 318551

E-mail: Service@aerzen.com

Mon-Fri from 8.00 to

24.00 h

www.aerzen.com/services.html



AERZEN Rental packages

Telephone: +31 26 4464723

E-mail: info@aerzenrental.com

24/7 Hotline + Service

www.aerzenrental.com

New and revised marketing materials

AERZEN has recently revised or introduced new marketing materials for the application areas of wastewater treatment, food technology and process gas technology.

How can energy costs be saved in wastewater treatment? How can hygienically pure process air be generated? What requirements must modern process gas compression meet? These are some of the questions which AERZEN customers will have to ask themselves in order to address the challenges posed by Industry 4.0, globalisation and constantly increasing cost pressures. We are supporting you in dealing with these challenges and offer answers to your questions in our new brochures. You can download the new brochures using your CustomerNet access via our website, or printed versions can be ordered by completing this request form:

<https://www.aerzen.com/company/request-and-contact/directory-of-contacts.html>



The new brochures AERwater, Food and Process gas technology

Visit us on our virtual exhibition stands

Trade fair cancellations? We have an alternative

Discover the virtual world of AERZEN. Despite the cancellation of major trade fairs this year, we are pleased to present our new and continuing developments for wastewater technology and for powder and bulk solids technology.

Visit our interactive 360° exhibition tours and experience this year's highlights and innovations. Find out how we offer an individual and resource-efficient solution to suit every requirement through the targeted use of our products and tailor-made accessory components.

Contact us and make an appointment with a customer advisor for a guided exhibition tour via web conference. Together, we can discuss the savings potential for your plant and talk about digital possibilities to prevent production losses and downtimes. Find out for yourself and save real money! We look forward to your digital exhibition visit. Let's Talk! ○

AERZEN makes virtual exhibition experiences possible!

- Virtual 360° exhibition tour about wastewater technology as an alternative to the IFAT Munich trade fair, which was cancelled: www.aerzen.com/ifat
- Virtual 360° exhibition tour regarding the powder and bulk solids industry as an alternative to the cancelled SOLIDS Dortmund and POWTEXH Nuremberg trade fairs: www.aerzen.com/powtech



AERZEN web seminars

Knowledge exchange despite contact restrictions

As an operator, engineering office or plant manufacturer of wastewater treatment plants, you are constantly faced with new challenges.

Up-to-date specialist know-how on topics such as energy efficiency, potential savings or ensuring compliance with environmental regulations forms the basis of the success of your daily work. However, it is often not so easy to keep up to date with the latest knowledge and at the same time manage your daily business. Your time is important to us! That's why our experienced specialists have combined the latest trends in the industry and effective solutions for wastewater treatment in a series of bundled 45-minute web seminars. Benefit from tried and tested approaches to solutions in our existing web seminars, the recordings of which you can download, view and share at any time. ○



All about web seminars



Just scan the QR Code and all the information about AERZEN web seminars will be available to you, including download of the recordings on the topics "Implementation of savings potential with wastewater treatment plants" and "Water 4.0 - Revolution or evolution in wastewater technology?" More web seminars for wastewater technology and other sectors and industries are already being planned. Register for our next web seminar using the QR Code.

New head for Western Europe

Matthew Morey has been appointed the new Director of AERZEN's Western Europe region. He will, thus, run the ten Western European sales and service companies of the AERZEN Group, form a management team for the EMEA region with the other regional managing directors in Europe and be the primary interface with production. Morey joined the AERZEN Group in 2006. For the last 14 years, he has been the head of AERZEN Machines Ltd., Great Britain. This business has achieved many successes, laying the foundations for more of the same in the future. Now Matthew Morey's strategic know-how and sound market knowledge will benefit the Western Europe region.



Matthew Morey

New Managing Director Aerzen Belgium

In March 2020, Frederik Deboyser took over the management of Aerzen Belgium N.V., based in Kortenberg near Brussels. The graduate engineer, who successfully completed a degree in electromechanics in 1993, has been at home in the world of blowers for over 24 years. From 1998 to 2007 and since 2014 he was Sales Manager at AERZEN's Belgian subsidiary. For the operational and strategic management of Aerzen Belgium the new Managing Director relies on a team which comprises both long-term as well as some relatively new employees. "With this mixture of our own experience and external developments, we are ready to develop the Belgian market with renewed vigour and energy, focusing on customer orientation and the quality of our products and services," emphasises Frederik Deboyser.



Frederik Deboyser

Americas: Wastewater specialist supports Sales

Jennifer Kintzer has taken over the position of application specialist for wastewater technology in the Americas region. With 25 years of experience in the wastewater industry, in her new role she will support the sales team in increasing performance in the wastewater industry in North, Central and South America and in the Caribbean. One of her priorities is the training of regional colleagues. Jennifer Kintzer worked in consulting for almost 20 years before she joined AERZEN USA as a Senior Applications Engineer, with responsibility for positive displacement blowers, screw compressors and turbo blowers.



Jennifer Kintzer

APAC: New Regional Application Manager

Wong Kah Wai took over the position of Regional Application Manager for the Asia/Pacific region (APAC) on April 1, 2020. He is based in Singapore. In conjunction with our subsidiaries in this region, he will seek to expand business with the wastewater industry. The 43-year-old has more than 15 years of experience in design, operation and consulting for leading wastewater companies such as Sembcorp Utility, UG M&E, Sumitomo Electric, Mitsubishi Heavy Industries, United Engineers, Black & Veatch and CH2Mhill. Wong Kah Wai holds a Master of Science and a Bachelor of Engineering in Environmental Engineering from the University of Singapore.



Wong Kah Wai

Ventilation of the aeration tank in sewage treatment plants

Conservation of resources through efficient solutions from AERZEN

According to the Federal Environment Agency, all sewage treatment plants in Germany have a combined annual electricity requirement of around 4,400 gigawatt hours¹ This corresponds to the annual output of a modern coal-fired power plant. The ventilation of the aeration tank is a particular focus, which alone is responsible for about 60 to 80 percent of the energy demand of the sewage treatment plant and offers a considerable potential for resource conservation. AERZEN has recognised this potential early and offers innovative solutions for the demand-oriented, efficient ventilation of the aeration tank.

The approach of AERZEN goes far beyond the mere provision of efficient blower and compressor technology. Thus the technological pioneer from Aerzen always has a holistic view of the possibilities for saving resources with his solutions for sewage plants. In concrete terms this means: AERZEN accompanies planners and operators on the waste water market along the entire value-added chain and takes over all necessary components on the way to "Water 4.0", from the measurement and recording of demand to the technology design and realisation and finally to the service.

Three major advantages

Resource-efficient ventilation concepts pay off for the customer in three ways. From an economic perspective, owners and operators of wastewater treatment plants benefit from a significant reduction in operating costs by an average of approx. 30% by investing in efficient aeration technology. Due to constantly rising electricity costs, the modernisation measure today usually pays for itself within two years. Against the background of the ongoing climate debate, sewage plant operators are making an active contribution to greater

environmental protection and a significant reduction in CO₂ emissions by investing in resource-saving technology.

The third major advantage of resource-efficient aeration concepts is the increasing transparency along the wastewater treatment processes. By recording all relevant process parameters, it is possible to evaluate efficiency transparently and sustainably using key figures and to continuously optimise processes on a sound basis. The first step on the way to "Water 4.0" at AERZEN is always the detailed recording, analysis and documentation of the actual load profiles. The AERaudit service includes the temporary measurement of volume flow, system pressure, temperature and power in the blower station. The recorded data is carefully evaluated and transferred into tailor-made concepts for increasing efficiency. Based on this analysis AERZEN then makes a tailor-made machine and technology selection consisting of Roots blower, rotary lobe compressor and/or turbo blower as well as an individual ROI (return of investment) calculation of the measure. In addition, AERZEN also offers support in room ventilation and sound concepts as well as heat recovery within the scope of the holistic approach.

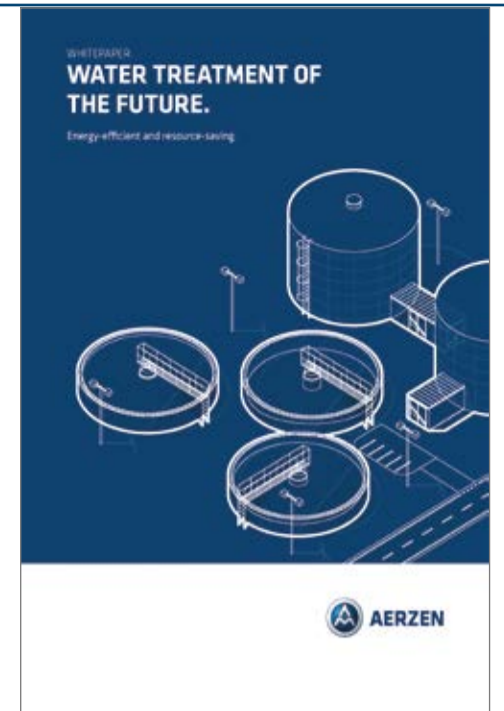
AERZEN MACHINERY (SHANGHAI) CO., LTD

Awarded as top company

In June 2020, in Shanghai Industrial Park (SIP), Aerzen China, with its annual tax payment of more than 10 million Yuan, was awarded as one of the most important companies in the Minhang region. Out of almost 1,000 companies, only 100 received this recognition. The well-known industrial area has been making these awards since 2016.

The Managing Director of AERZEN MACHINERY (SHANGHAI) CO., LTD, Sam Hoo, accepted the award on behalf of the company and participated in a symposium on the topics of the future of SIP and how individual companies in China have responded to the Coronavirus pandemic. He explained to the audience how

Aerzen China has come through the crisis in good shape thanks to the implementation of various preventive and protective measures, focusing on the interests of the employees and the company. He expressed his gratitude to the authorities for the targeted economic measures, helping companies to resume work and production quickly.



The current AERZEN whitepaper "Water treatment of the future" can be downloaded via the QR code.



Support in financing

If the technical details for the modernisation of the sewage treatment plant are available, AERZEN offers support in financing the measure in cooperation with external partners. This makes it possible to noticeably improve the business case through state subsidies. Subsequently, AERZEN supports the implementation and enables with its master machine control AERsmart the continuous optimisation of the energy balance as well as the networking and data analysis. During the operating phase, the compressor specialist also ensures maximum security against costly process interruptions with a tailor-made spare parts and service management system.

Data-based services offer a further potential for optimising efficiency in compressor operation. With the new digital service AERprogress from AERZEN (see page 5) the operating data of the blower and compressor technology are automatically recorded, evaluated and analysed. Operators are provided with tailored information, reports and recommendations for action in order to identify potential for improvement and to optimise the operation of the compressors in the long term.

¹<https://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/3855.pdf>

Representatives of the district emphasised during the event that Aerzen China has distinguished itself through its excellent achievements in the fields of management, production and operational capacity, and has been setting a good example for other companies in Shanghai Industrial Park to follow since 2015.



Managing Director, Sam Hoo, accepted the award on behalf of Aerzen China.

AERZEN focuses on the data-based consideration of the entire life cycle of its machines

AERprogress - Added value through digitisation

The future is digital - this also applies to compressor and blower technology. Data-based services open up new opportunities for operators of process and compressed air packages across all industries to design processes in a resource saving, energy efficient manner. AERZEN is committed to digital transformation and with AERprogress now offers its customers customised digital services for compressors, turbos and blowers.

From the operator's point of view, the change towards networked compressor and blower packages is attractive in several respects. On the one hand, the extensive recording and evaluation of energy-related process data allows efficient control of the assemblies in combination - this can noticeably reduce energy costs and CO₂-emissions. On the other hand, operators benefit from greater process safety, transparency and reliability. The recording of all relevant operating data provides information about the processes involved in the compression process. This information can be used to implement modern and data-supported service and maintenance concepts. Advantage: condition-based service and maintenance of the systems reduces the number of incidents and minimises downtimes.

Aerzen Digital Services

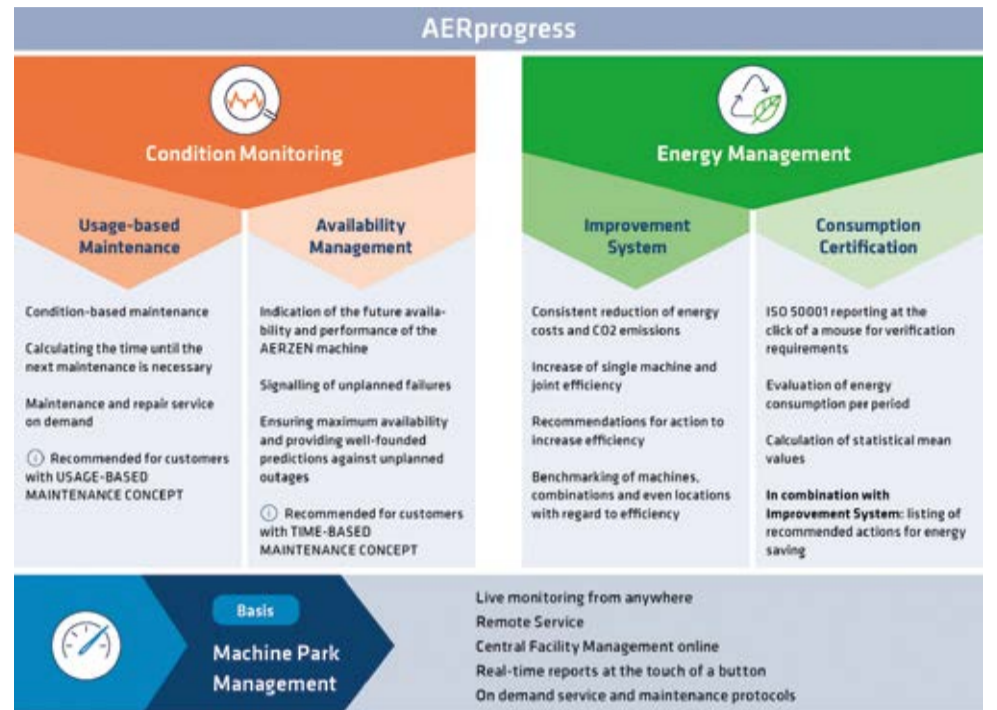
The new company unit Aerzen Digital Systems underlines the transformation of Aerzener Maschinenfabrik from a re-

nowned manufacturer of assemblies to a digital system integrator. As a leading technology developer AERZEN focuses on the data-based consideration of the entire life cycle of its machines. The service offer of the new digital unit is accordingly focused on the overall optimisation of the entire process chain.

The focus of the new AERprogress offer is the customer as operator of compressor and blower packages: The various components of the modular service package are aimed at optimising the cost structure in Machine Life Cycle Cost Management in a sustainable and customer-specific manner.

Maximum transparency

As a basic package AERZEN offers the user-friendly Machine Park Management. Users can see all active plants on an interactive world map and can select them specifically. This allows you to see at a glance which machines are in operation, when maintenance is due or where a fault may be present. In the monitoring menu the



The various components of the modular service package AERprogress

user can view the relevant process parameters in detail: Diagrams and trend displays provide information about performance, availability and utilisation of machines. Sensitive and customer-specific process data is always protected during live transmission, data ownership remains with the customer at all times. For the operator, the central plant management reduces time and cost-intensive on-site appointments.

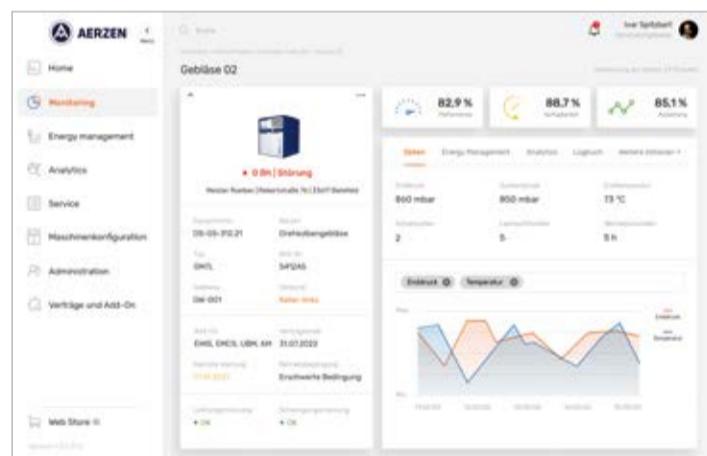
Customised Add-ons for individual projects

In order to meet the individual, industry-dependent requirements for operation of blower and compressor packages, AERZEN offers various Add-ons.

The Add-ons in the Condition Monitoring section are aimed at optimising plant availability through time- or usage-based maintenance concepts. By recording the operating hours or system conditions, it is possible to fully exploit the service life of the components.

In the category Energy Management AERZEN offers with the Improvement System an Add-on for sustainable reduction of energy consumption and CO₂-emission. By means of the data-based evaluation of energy-related parameters, weak points are identified and optimisation potentials are made visible. Depending on the system configuration, this makes it possible to reduce energy costs by more than 20 %.

The Consumption Certification Add-on rounds off the range of services of AERprogress and allows the customers to create standard-compliant reports with just one click. The reports meet the requirements of the energy management standard ISO 50001:2018 and facilitate the obligation to provide proof to shareholders and stakeholders.



In the monitoring menu the AERprogress user can view the relevant process parameters in detail.

More information about AERprogress

The QR code takes you to the website www.aerzendigital.com and to further information about AERprogress. Under the link "Platform" you will also find exclusive videos that explain and show the individual features.



Sizes AT400-0.8T and AT400-1.0T

Efficiency optimisation of AERZEN turbo blowers

Since the product introduction of the extremely efficient turbo blower series, Aerzen Turbo, numerous AERZEN customers worldwide have already benefited from the energy savings. The AERZEN development team has now turned the efficiency screw once more for the sizes AT400-0.8T and AT400-1.0T.

The improved energy efficiency is the result of a redesign of the so-called twin turbo stages, in which two impellers run in parallel on the motor shaft of the permanent magnet motor. On the basis of complex CFD (Computational Fluid Dynamics) analyses, the turbo stages were driven to new peak values in terms of energy effi-

ciency and motor cooling and were granted a corresponding patent.

Numerous advantages

The Aerzen Turbo sizes AT400-0.8T and AT400-1.0T cover flow rate ranges up to 16,000 m³/h, differential pressures up to 1 bar and drive capacities up to 300 kW.

The innovative Aerzen turbo series are characterised by the following advantages:

- Increase in energy efficiency of up to 15% compared with conventional turbo technology
- Extended bearing life thanks to innovative AERZEN air bearings with double coating (>80,000 operating hours, independent of start and stop cycles)
- Highest reliability even under extreme operating conditions and pressure fluctuations
- Lowest maintenance effort, only regular filter change
- 100 percent oil-free

- Extended application possibilities at ambient temperatures up to 50°C
- Active pump protection through automatic speed increase
- Space-saving design

The Aerzen Turbo AT400



AERZEN has newly developed the AERtronic

Digital control technology for blowers and compressors

Everyone is talking about digitalisation, automation and Industry 4.0. Integrating digital applications in the control of blowers and compressors also offers great potential for increasing machine availability, reliability and information transparency in the high-level control system of the machine operator. Therefore, AERZEN develops its portfolio in the field of assembly control consequently and counts on the advantages of digitalisation. With the newly developed AERtronic, AERZEN has now succeeded in extending the functional spectrum of its predecessor by digital applications.

As a customer-oriented and practical experienced manufacturer of highly efficient blower and compressor technology AERZEN always works close to the needs of the customers. The technology pioneer has therefore quickly realised that the further development of digital functions in the control technology of process air systems brings extensive advantages for the operators of the machines: The software-based recording, analysis and evaluation of relevant process parameters not only makes digital solutions more user-friendly, but also enables significant optimisation in operation.

The new generation of the AERtronic machine control system has, therefore,

been specially developed to meet the customer requirements of the various industries. AERZEN offers the system in the three versions Basic, Advanced and Premium. These differ in their range of functions and can, therefore, be tailored to the individual needs of the plant operator.

Three versions Basic, Advanced and Premium

The AERtronic Basic variant acts as a digital machine parameter display and fault indicator. The user can now read the relevant process parameters such as pressures and temperatures on a modern display and transfer them easily and conveniently to the control room via Modbus RTU interface

- unlike its predecessor, an analogue display unit with circular instrumentation.

In addition to these functions, the AERtronic Advanced control unit offers the possibility of actively controlling processes. The device uses the sensors to identify critical states in the process and switches the machine off, if necessary, to prevent damage. In addition, the plant operator has the possibility to transmit the recorded parameters via Modbus RTU to his higher-level systems such as Supervisory Control And Data Acquisition (SCADA). This function makes it possible to make processes in the plant even more transparent and to identify potential for improvement at an early stage. This variety of functions plays out its advantages above all with the Delta Screw screw compressor and is, therefore, provided as standard. If you are looking for an "Industry 4.0 ready" solution for your processes, you will find an advanced and user-friendly machine control in the AERtronic Advanced. Customers also have the option of using the Advanced control unit to access additional interfaces such as Modbus TCP, ProfiNet® and Profibus® or to visualise all information on smartphone, tablet or PC via WebView.

The premium version of the AERtronic is based on the Advanced control unit and enables the operator to access further services via the AERZEN platform to increase availability, efficiency and evaluation. The artificial intelligence trained and programmed on the basis of more than 150 years of mechanical engineering experience ensures even more efficient, reliable and smarter machine operation. The innovative AERZEN control units set the course for operators of blowers and compressors towards digitalisation of production. Thanks to the extensive functional diversity of the systems, it is possible to combine the highest safety standards with maximum user comfort and process efficiency. The use of an AERtronic control unit also extends the service life of the system by protecting the machine specifically against failures caused by overloads.

Comparison of variants

An even more detailed explanation and a clear comparison of the three variants Basic, Advanced and Premium can be found under this link:

www.aerzen.com/products/control-technology/aertronic-unit-control.html

Questions, Suggestions, Ideas?

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New intermediate size with volume flows of up to 6,300 m³/h

Product expansion for Delta Blower Positive Displacement Blowers

AERZEN's extensive assembly series has been expanded to cover intake volume flows of 6,300 m³/h. This enables AERZEN to offer its customers even more finely graded blower sizes. Individual requirements for process air production can, thus, be fulfilled in a more applied manner and more efficiently.

With the new size GM 100S within the Delta Blower series, the previous volume jumps of 5,400 and 7,900 m³/h are clustered even more differentiated, in this case with an intermediate size of 6,300 m³/h at a nominal diameter of DN 250 and a pressure range of up to 1,000 mbar. The expansion of the blower portfolio is the answer to the increased demand in this volume or pressure range. AERZEN is further expanding the position of the powerful Delta Blower product family with a finer gradation.

Offering a wide range of applications for the oil-free transport of air and neutral gases, the Generation 5 Delta Blower assemblies highlight the more than 150 years of development expertise of the technological pioneer AERZEN: powerful, robust positive displacement blowers, which are also highly reliable in continuous operation and convince by their durability. Easy

to handle and designed to produce a low level of noise, the blower stages of the Delta Blower series are packed with German engineering expertise and also prove themselves under difficult climatic as well as special environmental conditions. The machines' intelligently designed hardware stands out with a compact design that also makes space-saving side-by-side installation possible. All assemblies can be used outdoors or indoors as a stand-alone or integrated system.

The volume flow of the various assemblies ranges from 30 to 15,000 m³/h; the control range spans from 25 to 100%, covering nominal widths from 50 DN to 400 DN. According to the AERZEN "100% free of oil and absorbents" promise, all Delta Blower assemblies guarantee product purity/process air purity because the company dispenses with absorption material for soundproofing. The base sup-

port acts as a discharge silencer, which uses air deflection to reduce sound. Advantage: this does not cause wear that could contaminate the downstream system. Oil-free conveying according to class 0 guarantees absolute purity in process air production, so that even sensitive production conditions can be handled with 100 percent safety.

The new positive displacement blower stage GM 100S fills the gap in the upper volume flow range.



AERtronic was specifically expanded by digital applications.

