

PERFORMANCE³.

HOW **EFFICIENT** IS YOUR **AERATION** REALLY?



AERZEN

GREATER EFFICIENCY WITH **PERFORMANCE³** FROM AERZEN.

Biological aeration accounts for 60% to 80% of a wastewater treatment plant's total energy requirements. Aeration therefore presents the greatest potential for savings, while also posing one of the greatest challenges. Large fluctuations in load profiles and varying degrees of contamination due to the region, time of day, season, or precipitation level make supply levels highly variable. Performance³ from AERZEN represents the most efficient, high-performance, and flexible blower solution ever developed for oxygen supply, offering customised machine configurations based on cutting-edge technologies. Let's talk about the savings potential in your wastewater operation.

Performance³.

Three blower technologies, one goal: maximum efficiency.

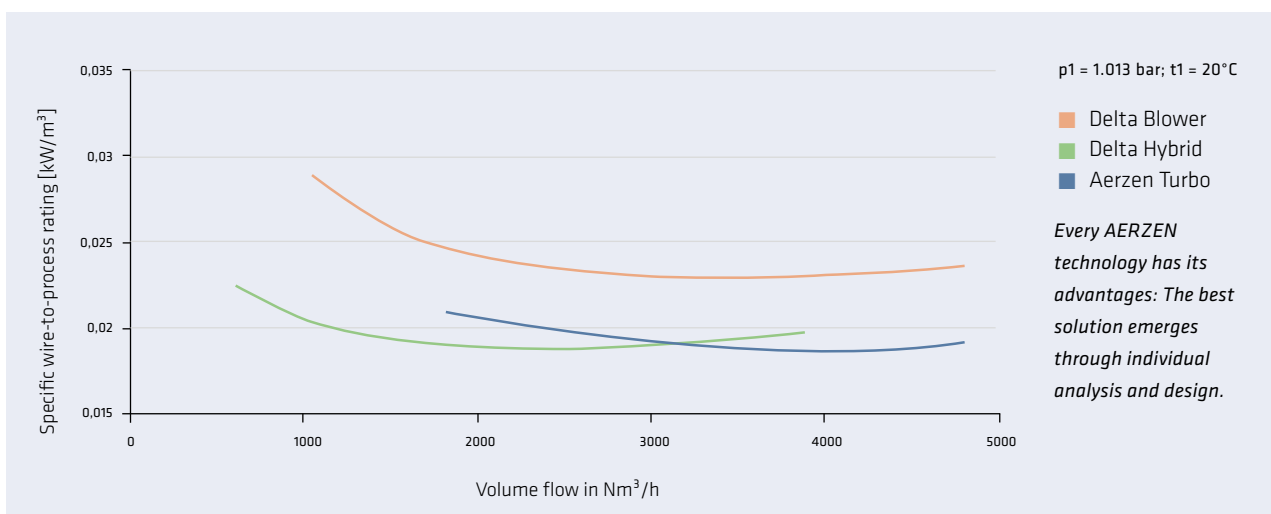
Performance³ not only means our product portfolio, consisting of the Delta Blower positive displacement blower, the Delta Hybrid rotary lobe compressor, and the Aerzen Turbo turbo blower; it also and especially means individualised solutions and the best possible integration of technologies. Every technology has its strengths, as well as its physical limits. For example from a design standpoint turbo blowers stand out for their unbeatable energy efficiency. At the same time, the control range of turbo machines is limited to between 40% and 100%, and their efficiency decreases under partial-load operation. It is precisely here, however, where positive displacement machines really shine. They offer a control range of 25% to 100% and a consistent level of efficiency, even under partial-load operation. When searching for the most efficient solution, it's

necessary to configure machine technologies in a way that meets the individual requirements of each plant. Whereas it used to be common practice to install blowers of just one size, today's plants often feature a mix of different sizes, or even technologies. Savings of up to 30% are possible. The AERZEN Performance³ concept offers customised solutions based on blower, hybrid, and turbo technologies.

Optimising savings potential - it's in the mix

It takes solid expertise and years of experience to configure the ideal technology type. A pioneer in innovative product solutions, AERZEN has developed high-performance machines for the industry for more than 150 years. The wastewater experts from AERZEN support their customers in designing best process performance with optimal machine configuration.

A comparison of power requirements and volume flow ranges.



An integrated approach: energy efficiency, control range, investment costs, service

Impressive Features: Turbo, Blower, Hybrid - the next generation.

Aerzen Turbo G5^{plus}

- Increases energy efficiency by up to 10% compared to conventional turbo technology
- Extended lifetime thanks to innovative AERZEN air foil bearing
- Low-maintenance and space-saving design
- 100% oil-free

Delta Blower G5^{plus}

- Increases energy efficiency by up to 5%
- Saves space thanks to even more compact design
- User-friendly and low-maintenance
- Absolutely oil-free according to TÜV certificate ISO 8573-1, Class 0
- Patented discharge silencer without absorption material

Delta Hybrid

- Savings of up to 15% compared to standard blowers
- Absolutely oil-free according to TÜV certificate ISO 8573-1, Class 0
- Patented discharge silencer without absorption material
- Reduced maintenance costs

Faster return on investment.

Today, real efficiency means adapting one's choice in blower technology to match precisely the load profiles in wastewater treatment plants. That's because every plant is different and has its own requirements. With a customised Performance³ design, you utilise the advantages of every machine technology. That means maximum energy savings with an optimal control range and minimal investment volumes. Depending on the plant, process optimisation can pay for itself within two years. Consisting of Blower, Hybrid, and Turbo, you are guaranteed to find an efficient and appropriate solution in AERZEN's Performance³ product portfolio.



Handle load changes precisely: technological diversity consisting of Aerzen Turbo, Delta Blower, and Delta Hybrid. Crucial for optimal performance.

ACHIEVE PERFORMANCE³. IDENTIFY AND CONTROL LOAD CHANGES.

A process and energy-efficient wastewater treatment operation begins with a status analysis and an evaluation of current operating data. We call this innovative solution AERaudit. AERsmart: This forward-thinking, integrated control system from AERZEN ensures the optimal allocation of required volume flows to the corresponding machines and their individual efficiencies. The result is previously unattained efficiency values approaching the theoretical maximum and significant savings of up to 15%.

Determining volume requirements with AERaudit.

On-site measurement:

The AERZEN service team gives transparency to the numbers from your blower station. A mobile measuring station is used to record all relevant aeration data. Volume flow, system pressure, temperature, and kW rating are measured live and recorded in the form of load profiles.

Analysis:

The recorded data is carefully and extensively analysed at AERZEN headquarters; even the smallest low and peak loads are evaluated. Based on the results, our experts tailor one or more concepts to your requirements, making them as efficient as possible.

Report:

All the data from your blower station is presented transparently and in detail. Temperatures, load profiles, and energy expenditures are all visualised in the form of diagrams and explained in depth. We present you with a customised Performance³ solution including the ideal machine configuration, a report on savings potential with regards to energy and CO₂, and what ROI times might be achieved.

The AERsmart integrated control system.

With AERsmart, the overriding control system for the device group, you can further optimise the performance behaviour of Performance³. The software ensures the optimal allocation of air volumes to the corresponding technologies and their individual efficiencies. This makes it possible to achieve outstanding efficiency levels that closely approximate the theoretical maximum. At the same time, AERsmart offers maximum transparency and a 360-degree view of your blower station.

The machine control system also efficiently allocates the required oxygen supply to the packages connected to the system, even when sudden changes in load occur. In this way, light, medium, and heavy loads can be managed efficiently, resulting in the best possible configuration for any plant combination. AERsmart ensures the reliable administration of control management and rules for a given compressor group. The combined operation of various blower stages - controlled by AERsmart - takes efficiency in aeration tanks to a new level. It is also possible for third-party equipment and installations with just one machine technology to be operated via AERsmart.

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