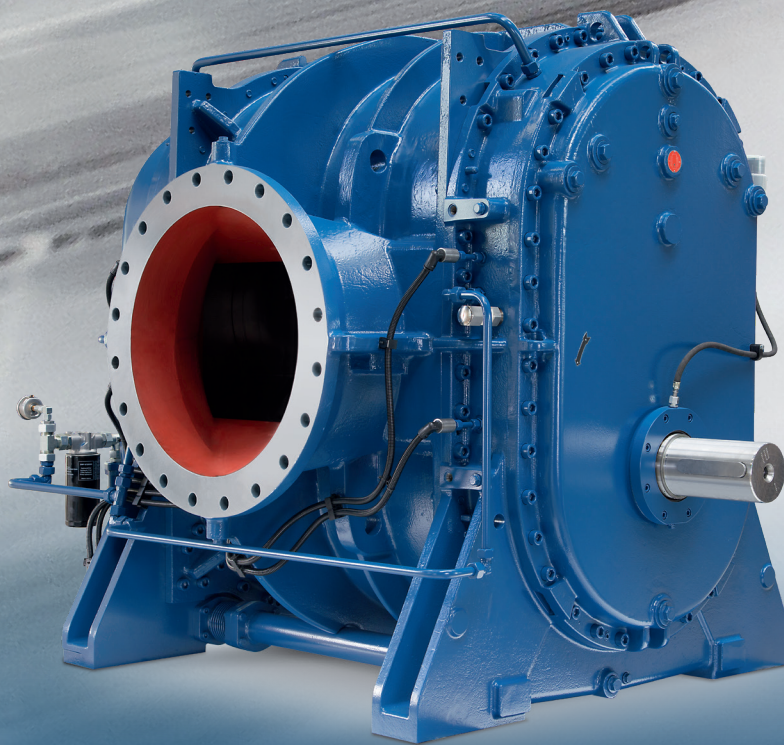


# **AERZEN Alpha Blower**

## Modular System for Large Blowers

Oil-free. Pressure range up to 2 bar (a).

Volume flows ranging from 9,600 m<sup>3</sup>/h to 77,000 m<sup>3</sup>/h



**AERZEN**  
EXPECT PERFORMANCE



# Alpha blower

## Individuality as modular system for stages and assemblies

The key to AERZEN's highly efficient large blowers? They are always the right-sized. This means that AERZEN provides you with the right blower size for each individual application. With the Alpha Blower's new modular system, customers can now choose between 26 different types. Perfect for the safe and highly efficient operation of your process air.

### AERZEN technologies, for every application

Wherever quality, reliability and machine safety are required, e.g. in case of critical processes or difficult ambient conditions, AERZEN offers custom-tailored solutions for any individual application. Our new durable and energy-efficient Alpha Blowers are a result of AERZEN's professional know-how and the experience gained over the last 150 years. The combination of proven technology paired with a new modular principle means the right machine for each application.


### Pneumatic conveying

In many cases, the transport of bulk material is carried out by pneumatic conveying. Depending on product and plant configuration, this takes place either with overpressure or negative pressure, whereby the bulk material is conveyed along piping by means of the volume flow of blowers. AERZEN's largest machines may be installed, for example, in lifting systems. They unload transport vessels – up to 1,000 tons an hour.

### AERZEN's services in the field of oxygen production

Air separation is a highly complex process. Nowadays, modern plants work according to the cyclic pressure swing adsorption-/desorption technique. In this process, the adsorption capacity of molecular filters is used. Separation occurs by the following method: Air is first conveyed into a tank and filled with the adsorption material zeolite. The air then separates from the nitrogen, resulting in over 90% pure oxygen. Afterwards, the room is evacuated for regeneration purposes of the adsorber (desorption) and the nitrogen is sucked off. AERZEN positive pressure blower takes care of the air supply in the tanks of the molecular filters. The evacuation is accomplished by means of tested AERZEN vacuum blowers. The AERZEN Alpha Blower is the right choice for increasing productivity and decreasing operational costs. This type of blower offers steady and long-lasting operation, which stands for an economical production of compressed air at high volume flows.





### Gases

- Oxygen
- Nitrogen
- Inert gases
- Special gases

### Fields of application

<ul style="list-style-type: none"><li>• Food processing</li><li>• Chemical industry</li><li>• Metal industry</li><li>• Oil and gas industry</li><li>• Marine industry</li><li>• Glass industry</li><li>• Cement industry</li><li>• Textile industry</li></ul>	<ul style="list-style-type: none"><li>• Power plant technology</li><li>• Mining</li><li>• Wastewater industry</li><li>• Mechanical engineering</li><li>• Iron and steel industry</li><li>• Plastics industry</li><li>• Paper industry</li></ul>
---	---



Plant for pneumatic conveying of bulk materials



Plant for the production of oxygen



# Top performance at high volume flows

## The height of reliability

The Alpha Blower is synonymous for the combination of durability, maximum precision and ultimate safety. Our blower has been optimised for flow design and processes, while well-known features have been further improved without detracting from a proven system. Finely graded sizes support greater efficiency and innovative component developments. Above all, the low energy consumption is decisive. Each AERZEN blower is specifically tailored to your process and configured accordingly: Therefore, it is always right-sized.



The Alpha Blower is available in 2- or 3-lobe rotor design

### Advantages to two-lobe blower technology

- High efficiency in negative pressure operation
- Low investment costs
- Pulsation reduction due to soft inlet as well as multi-flow principle and optional AirSilence

### Advantages to three-lobe blower technology

- Low pulsation in piping
- Reduction in shocks
- High efficiency in overpressure operation
- Optimised sound absorption due to smaller silencer

#### 1 Cylinder with multi-flow principle

- Avoidance of air turbulence on discharge side
- Pulse reduction and reduction in piping noise level on the discharge side by means of soft inlet
- Standard with all two-lobe machines

#### Interference channel

- Proven outlet contour for controlled pulsation reduction by means of defined backflow of gases
- Standard with all three-lobe machines

#### 2 Nodular iron side plates, cast in one piece

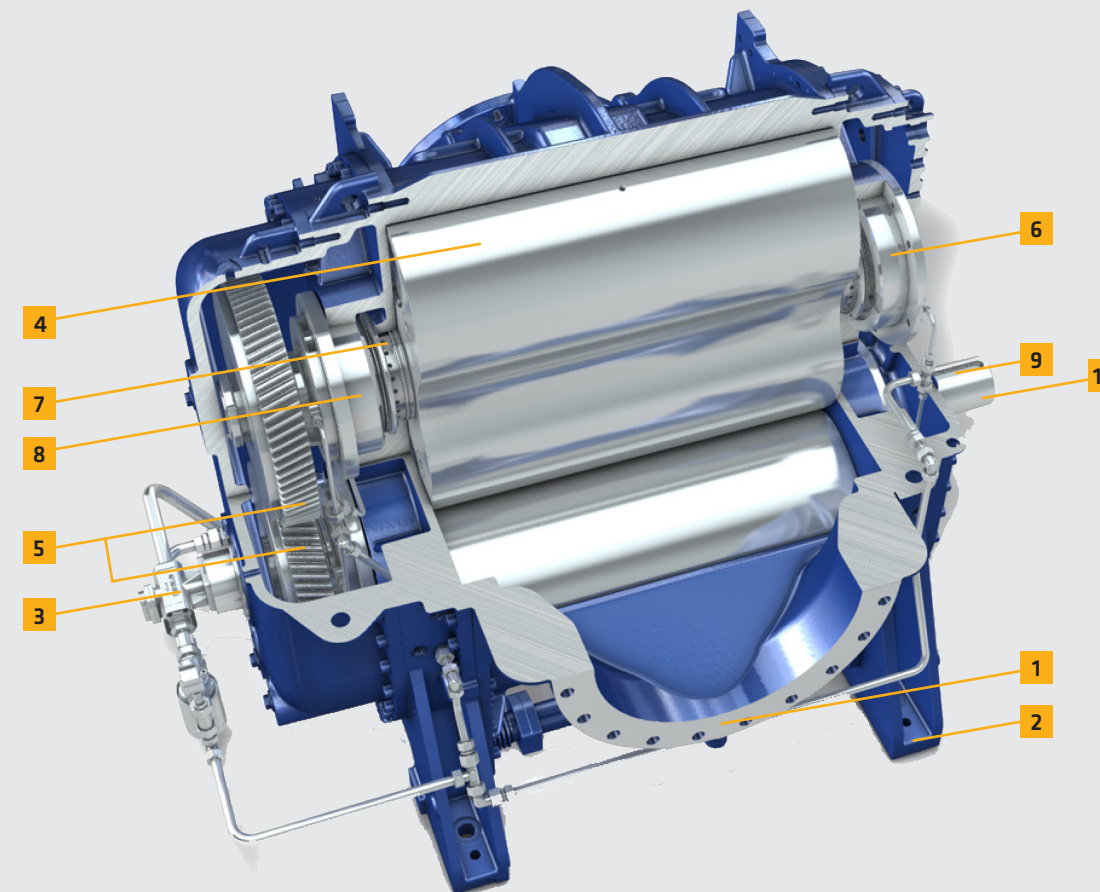
- Incl. machinery mounting foot for safe position
- Sufficiently sized oil reservoir integrated in the mounting foot
  - No additional oil reservoir necessary
- Enhanced damping properties by direct conducting of bearing forces into the foundation
- Maximal protection against cracking through greater ductility in materials
  - No flaking of housing parts

#### 3 Forced-feed lubrication

- Secured oil supply for optimum lubrication of the timing gears and roller bearings by means of mechanically driven oil pump (forced lubrication)
- Increases bearing lifetime
- Optional for GM version machines (vertical conveying direction) or standard in GL version machines (horizontal conveying direction)

#### 4 Rotors made of nodular iron

- High precision
- No coating of rotors necessary
  - No chipping of the coating, and thus contamination of the following process
- Consistent efficiency across the life cycle
- Increased dampening properties
- Extreme stability due to high strength values



#### 5 Synchronous gear wheels made of 18CrNiMo7-6

- Increased strength
- Hardened, ground and helically geared gear wheels for optimal power transmission and smooth operation

#### 6 Roller bearings

- Roller bearings made by name-brand manufacturers
- Theoretical bearing service life of  $L_{H_{10}} > 40,000$  operating hours
- Recommended AERZEN revision intervals: 5 years

#### 7 Conveying chamber sealing

- Rectangular labyrinth seals
- 100% oil-free as per class 0 according to ISO 8573
- Fast and secure removal of the sealing package as closed assembly (cartridge) without expensive disassembly of the rotors and side plates
- Reduced maintenance expenditure
- Reduced downtimes

#### Gearbox chamber sealing

- Rectangular labyrinth seals with oil repellency (oil slinger)
- Relief of drive shaft sealing
- Targeted pressure reduction due to a deaeration bore (neutral chamber)

#### 9 Drive shaft sealing

- Radial shaft seal rings with predefined pretension and grease barrier on hardened and ground shaft sleeve
- Durability of shaft seal due to automatic relubrication
- Avoids penetration by foreign particles and leaking of oil

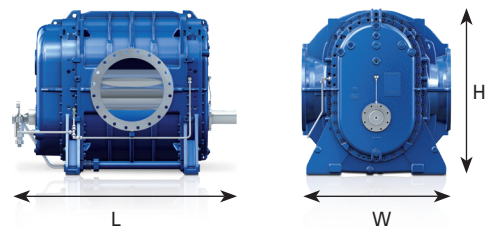
#### 10 Single-piece shaft made of 42CrMo4

- Low vibration level thanks to high concentricity
- Reduction in component tolerances due to processing the entire assembly occurring in one clamping
- Increased tightness due to ground shaft sleeve for the seal rings
- No breaking off due to the shaft's consistency
- Centred process without displacement guarantees minimum bearing load
  - High alternating load capacity

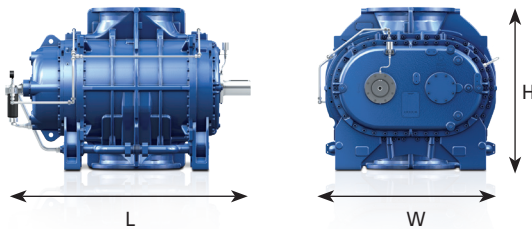
# The modular system

## A giant in its diversity

Alpha Blower, model GL



Alpha Blower, model GM



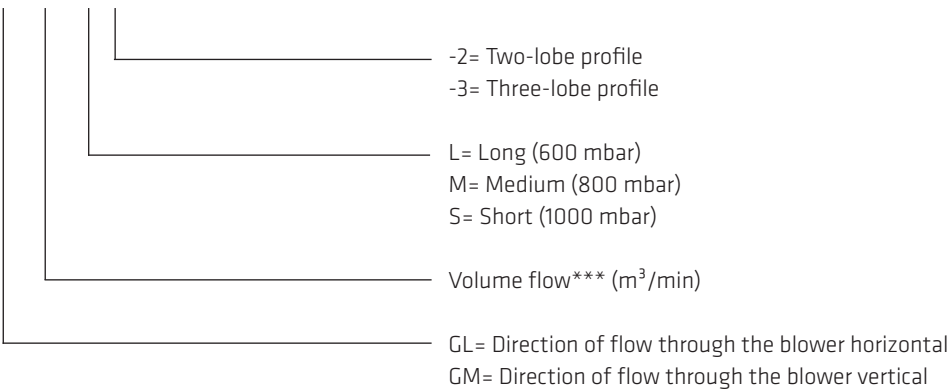
Designation	Flow direction	Size	Overpressure [max. mbar]	Negative pressure [max. mbar]		Volume flow*** [max. m³/h]	Weight	Width/Hight	Length [L]	DN Discharge side
	M* / L**			Without pre-inlet (cycle operation)	With pre-inlet (continuous operation)			[W x H]		
G	M	190 S	1000	600	on request	11100	1798	960 x 1000	1605	400
	L							1000 x 1070		
G	M	220 M	800	600	on request	12900	1914	960 x 1000	1705	400
	L							1000 x 1070		
G	M	250 M	800	600	800	15100	2038	960 x 1000	1830	500
	L							1000 x 1070		
G	M	280 L	600	600	on request	16800	2214	960 x 1000	1930	500
	L							1000 x 1070		
G	M	300 L	600	600	on request	18000	2251	960 x 1000	1995	500
	L							1000 x 1070		
G	M	330 L	600	600	on request	19700	2441	960 x 1000	2095	500
	L							1000 x 1070		
G	M	270 S	1000	600	800	16100	3075	1225 x 1120	1830	500
	L							1120 x 1300		
G	M	310 M	800	600	on request	18400	3209	1225 x 1120	1930	500
	L							1120 x 1300		
G	M	340 M	800	600	on request	20700	3343	1225 x 1120	2030	500
	L							1120 x 1300		
G	M	380 M	800	600	on request	22700	3669	1225 x 1120	2120	600
	L							1120 x 1300		
G	M	420 L	600	600	600	24900	3784	1225 x 1120	2220	600
	L							1120 x 1300		
G	M	450 L	600	600	on request	27100	3899	1225 x 1120	2320	600
	L							1120 x 1300		
G	M	410 S	1000	600	on request	24300	5191	1520 x 1420	2055	600
	L							1420 x 1570		
G	M	460 S	1000	600	800	27200	5403	1520 x 1420	2155	600
	L							1420 x 1570		
G	M	510 M	800	600	on request	30300	5616	1520 x 1420	2265	700
	L							1420 x 1570		
G	M	550 M	800	600	on request	33200	5833	1520 x 1420	2365	700
	L							1420 x 1570		
G	M	600 M	800	600	800	36000	6323	1520 x 1420	2465	700
	L							1420 x 1570		
G	M	650 M	800	600	on request	38700	6558	1520 x 1420	2565	700
	L							1420 x 1570		
G	M	720 L	600	600	on request	43100	6838	1520 x 1420	2723	800
	L							1420 x 1570		
G	M	760 L	600	600	on request	45800	7116	1520 x 1420	2823	800
	L							1420 x 1570		
G	M	710 S	1000	600	800	42400	9052	1880 x 1800	2765	800
	L							1800 x 1910		
G	M	820 M	800	600	on request	49200	9700	1880 x 1800	2905	800
	L							1800 x 1910		
G	M	940 M	800	600	on request	56100	10348	1880 x 1800	3150	800
	L							1800 x 1910		
G	M	990 L	600	600	on request	59400	10483	1880 x 1800	3330	1000
	L							1800 x 1910		
G	M	1100 L	600	600	600	66300	11121	1880 x 1800	3540	1000
	L							1800 x 1910		
G	M	1220 L	600	600	on request	72900	11759	1880 x 1800	3775	1000
	L							1800 x 1910		

\*Vertical \*\*Horizontal

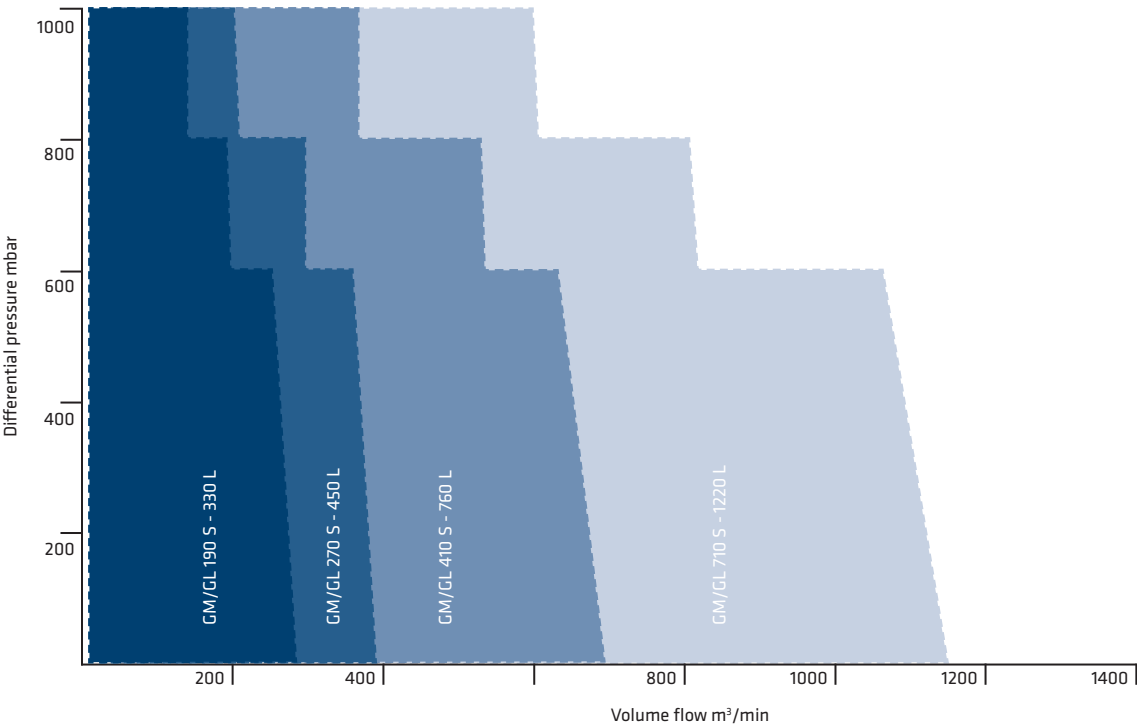
All types are available as two-lobe and three-lobe variant. The following data corresponds to these variants.  
(Data and dimensions not binding, products subject to technical changes.)

### Explanation of model names

GM 650 M-2



### Alpha Blower – Fields of application



\*\*\* Volume flow (corresponds to the delivery volume flow measured according to ISO 1217 and converted to the reference suction conditions according to the (informative) Annex F of ISO 1217 [inlet pressure = 1.0 bar / inlet temperature = 20°C, RH = 0%])

# Infinite modifications

## Modular & Customisable

Alpha Blower – now more unique than ever. Besides variations in size, numerous possible modifications and a wide range of accessories complete the AERZEN modular system, providing customers with maximum individualisation. These options make the Alpha Blower a solution for practically any requirement.

### STAGE MODIFICATIONS

#### Safety modules

- Vibrational monitoring  
Premature detection of early bearing damage
- Protection of the rotors against unintentional horizontal or vertical contact of the rotors with the cylinder wall.
- Bearing temperature monitored by temperature sensors on the outer races of the roller bearings
- Central oil lubrication also available for GM versions

#### AirSilence

- Reduction of pulsation by means of attenuated differential pressure between intake and system pressure
- Only available for two-lobe blowers

#### Pre-inlet

- Selective supply of cooling air into the conveying chamber to achieve higher negative pressure

#### Tests & inspections of the stage

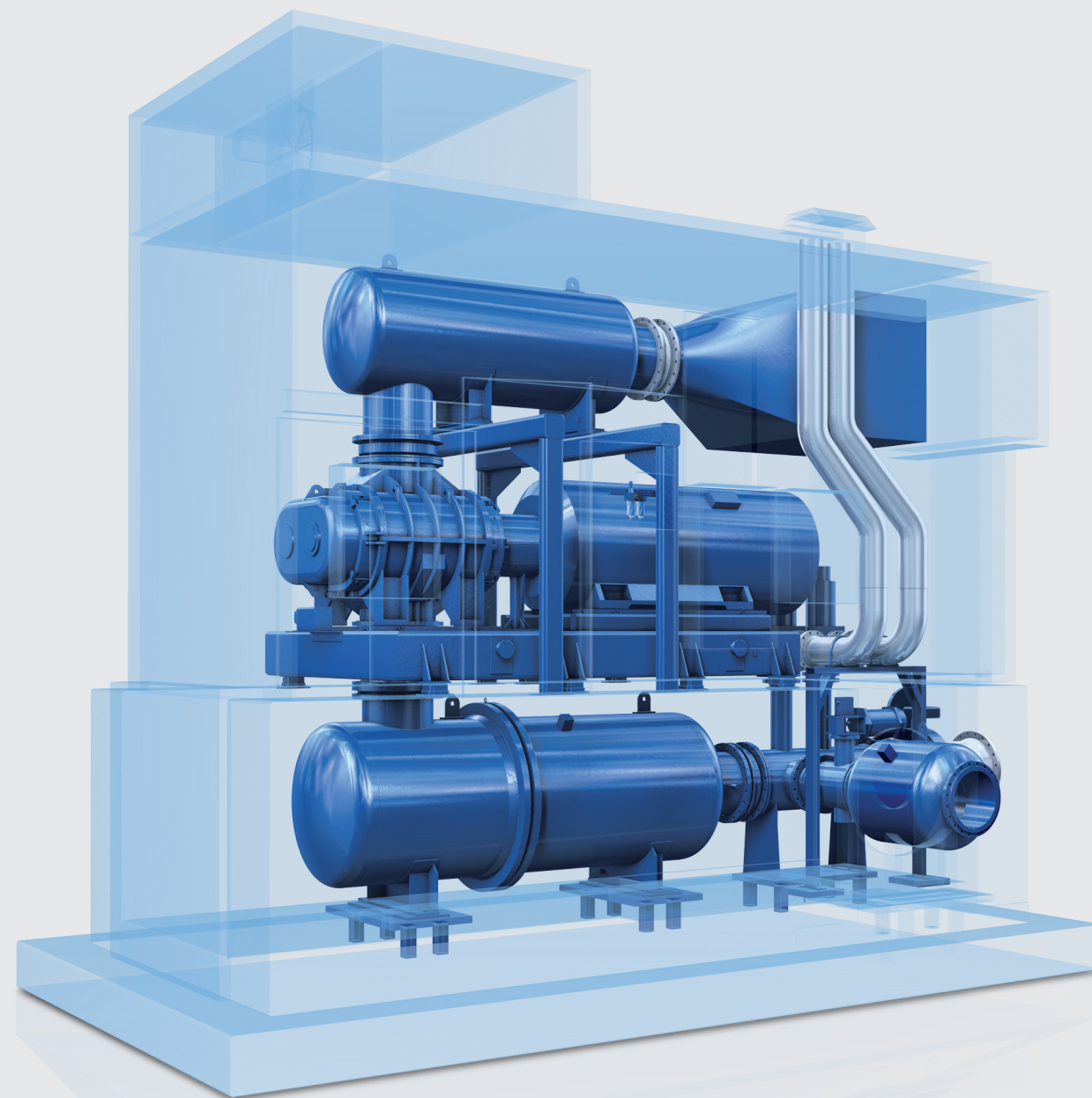
- Strength test
- Leakage test
- Vibration measurement during test run
- Performance test

#### Certificates

- Balancing reports
- Class 0-certificate
- 3.1 certificates for material and/or testing

#### Colour

- Available in colours other than RAL 5001
- SikaCor finish for onshore and offshore applications



### ASSEMBLY MODIFICATIONS

#### Acoustic hood

- Internal and external installation
- SikaCor finish for special ambient conditions
- Available in colours other than standard RAL 5001

#### Assembly accessories

- Suction and discharge side silencer
- Available in colours other than standard RAL 5001
- Flexible piping connections for customer piping, e.g. axial compensator
- Maintenance indicator for filter monitoring
- Pressure gauges
- Temperature sensors
- AERZEN control
- Electrically operated start-up unloading device
- Pressure valve
- Check valve

#### Motor

- Three phase AC motors for 50/60 Hz networks and different low, medium and high voltages
- Motors in conformity with ATEX
- Customer motors
- Diesel and gas engines

#### Tests & inspections of the whole assembly

- Leakage test
- Function test with customer presence
- Sound measurement
- Finish test

#### Base frame

- Robust and sturdy design

#### Certificates

- Material and calibration certificates, among others
- ATEX

# Everything – expect ordinary

## The service world of **AERZEN**

The long service life of AERZEN machines is legendary. So why is service an issue at all? Because it's about more than availability and OEM original parts. The services from AERZEN secure investments, productivity and a decisive competitive edge. And this worldwide.



### AERZEN on-site service

Our service teams work where our machines are. All over the world. Onshore or offshore. Often under extreme conditions. How do we achieve this? With short distances. AERZEN has a dense network of service centres and decentralised parts warehouses around the globe. More than 200 excellently trained service technicians can come to your aid from there. Any time and anywhere you need us

### For rental service and other services

AERZEN's service world has a lot on offer. Tailor-made service kits, for example. Replacement stages, machine diagnostics, sound optimisations. One of our most important services is AERZEN Rental Division, which provides a large fleet of rental machines. Blowers, turbo machines and compressors - made by AERZEN. In a wide range of performance classes. For all common pressure ranges. Can be used immediately and delivered turnkey on request. What does that mean for you? You are also well prepared for unexpectedly upcoming needs [www.aerzenrental.com](http://www.aerzenrental.com)



### Contact worldwide

2,500 employees work for AERZEN. On every continent. With six sales offices in Germany alone, we're there for you. And with 50 subsidiaries in over 100 countries around the world. Hence we're never far away – should you ever need us. Give us a call: [+49 5154 81 0](tel:+495154810)

### Service-Infoline

Our German Service Centre is available for customers and operators. We are happy to help you. We look forward to your call: [+49 700 49318551](tel:+4970049318551)

### Customer Net

Where you can learn more about the company and the leading compressor technologies from Aerzen? It's simple: In our Customer Net on our website, where we have stored everything that is worth knowing for you: [www.aerzen.com](http://www.aerzen.com)



**LET'S TALK**  
Find your local contact  
[www.aerzen.com/worldwide](http://www.aerzen.com/worldwide)



## **AERZEN** Compression is the key to success

AERZEN was founded in 1864 as Aerzener Maschinenfabrik. In 1868, we built Europe's first positive displacement blower. The first turbo blowers followed in 1911, the first screw compressors in 1943, and in 2010 the world's first rotary lobe compressor package. Innovations made by AERZEN keep driving forward the development of compressor technology. Today, AERZEN is among the world's longest established and most significant manufacturers of positive displacement blowers, rotary lobe compressors, screw compressors and turbo blowers.

AERZEN is among the undisputed market leaders in many areas of application. At our 50 subsidiaries around the world, more than 2,500 experienced employees are working hard to shape the future of compressor technology. Their technological expertise, our international network of experts, and the constant feedback we get from our customers provide the basis for our success. AERZEN products and services set the standard in terms of reliability, value and efficiency. Challenge us.



**LET'S TALK**  
**Find your local contact**  
[www.aerzen.com/worldwide](http://www.aerzen.com/worldwide)

Aerzener Maschinenfabrik GmbH  
Reherweg 28 – 31855 Aerzen / Germany  
Phone: +49 5154 81 0 – Fax: +49 5154 81 9191  
[info@aerzen.com](mailto:info@aerzen.com) – [www.aerzen.com](http://www.aerzen.com)



**AERZEN**  
**EXPECT PERFORMANCE**