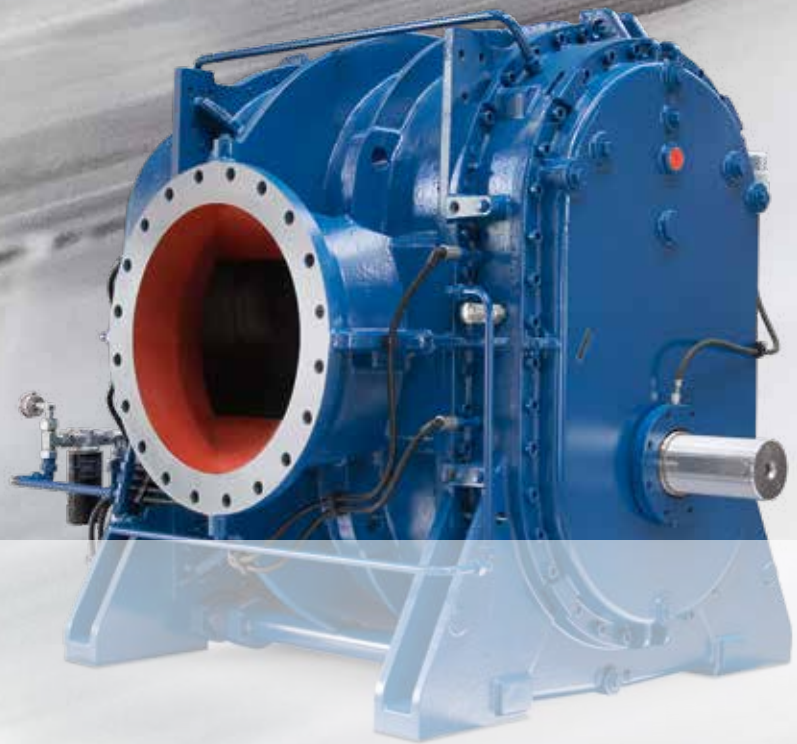


# AERZEN ALPHA BLOWER

## 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**

# 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.



*Plant for pneumatic conveying of bulk materials*



*Plant for the production of oxygen*





#### **Gases**

- Oxygen
- Nitrogen
- Inert gases
- Special gases

#### **Fields of application:**

- Food processing
- Chemical industry
- Metal industry
- Oil and gas industry
- Marine industry
- Glass industry
- Cement industry
- Textile industry
- Power plant technology
- Mining
- Wastewater industry
- Mechanical engineering
- Iron and steel industry
- Plastics industry
- Paper industry

# 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.

## 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

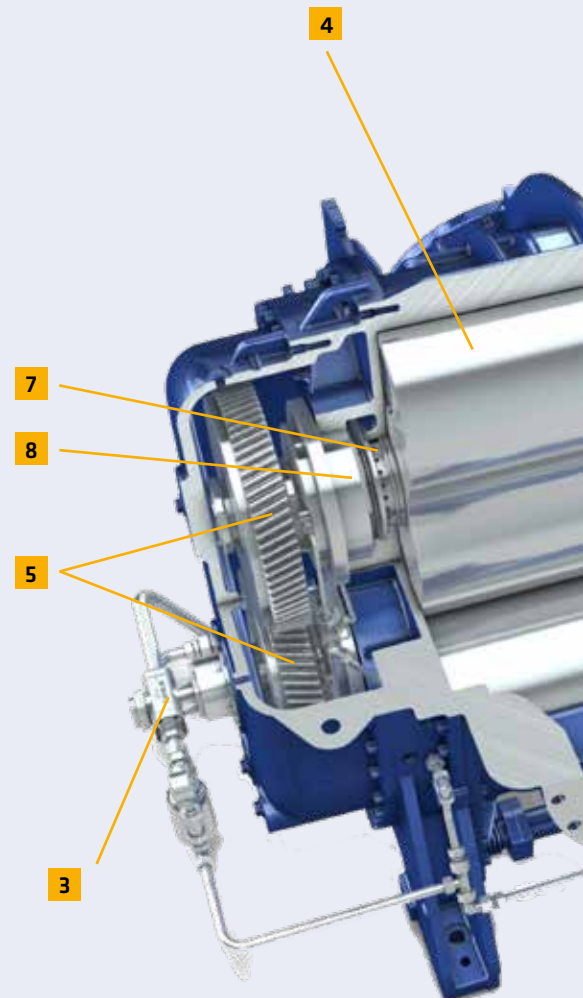
- Incl. machinery mounting foot for safe position
- Sufficiently sized oil reservoir integrated in the mounting foot
  - ⊕ No additional oil reservoir necessary
- Enhanced damping properties by direct conducting of bearing forces into the foundation
- Maximal protection against cracking through greater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



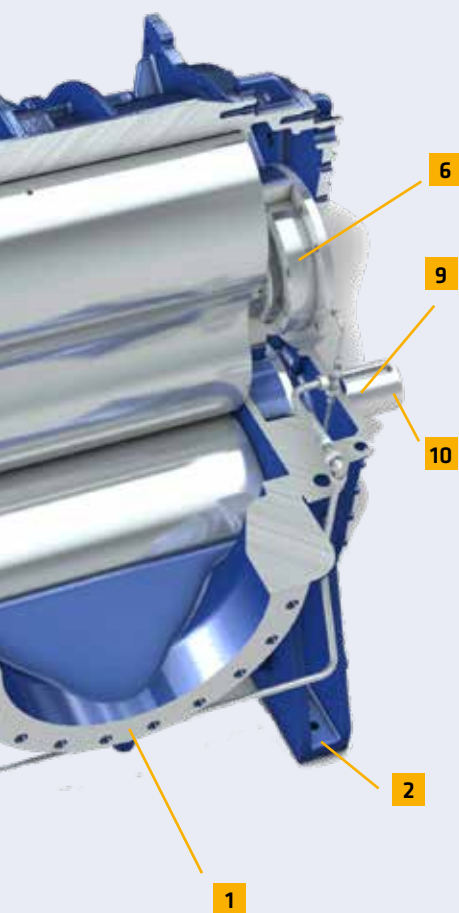
The Alpha Blower is available in 2- or 3-lobe rotor design.

#### 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



#### 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

- #### 8
- 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

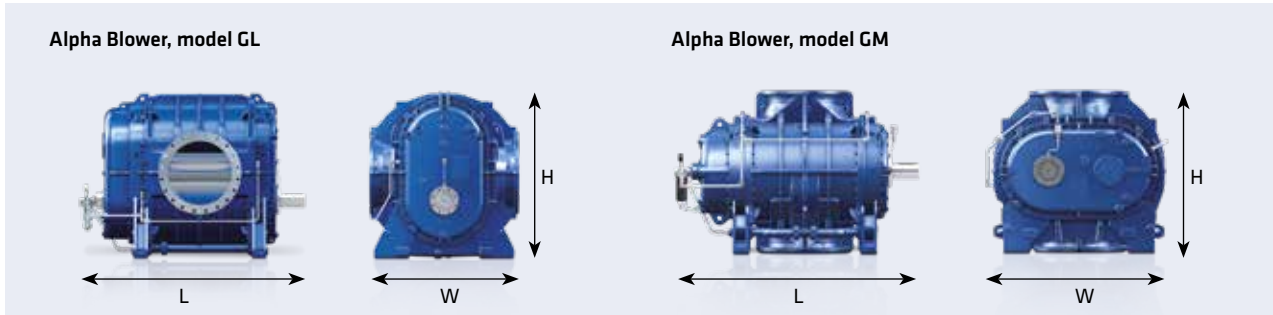
#### 10 Single-piece shaft made of 42CrMo4

- 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.

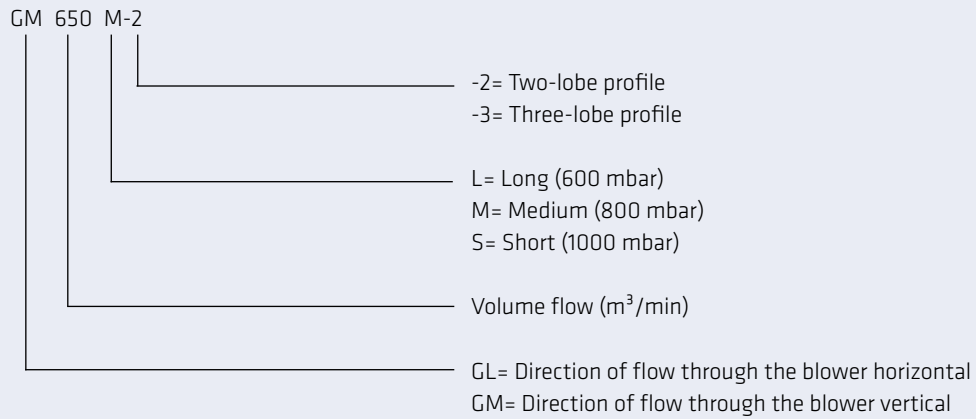


Designation	Flow direction	Size	Overpressure [max. mbar]	Negative pressure [max. mbar]		Volume flow [max. m³/h]	Weight	Width/ Height [W x H]	Length [L]	DN Discharge side
				Without pre-inlet (cycle operation)	With pre-inlet (continuous operation)					
G	M	190 S	1000	600	on request	11100	1798	960 x 1000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

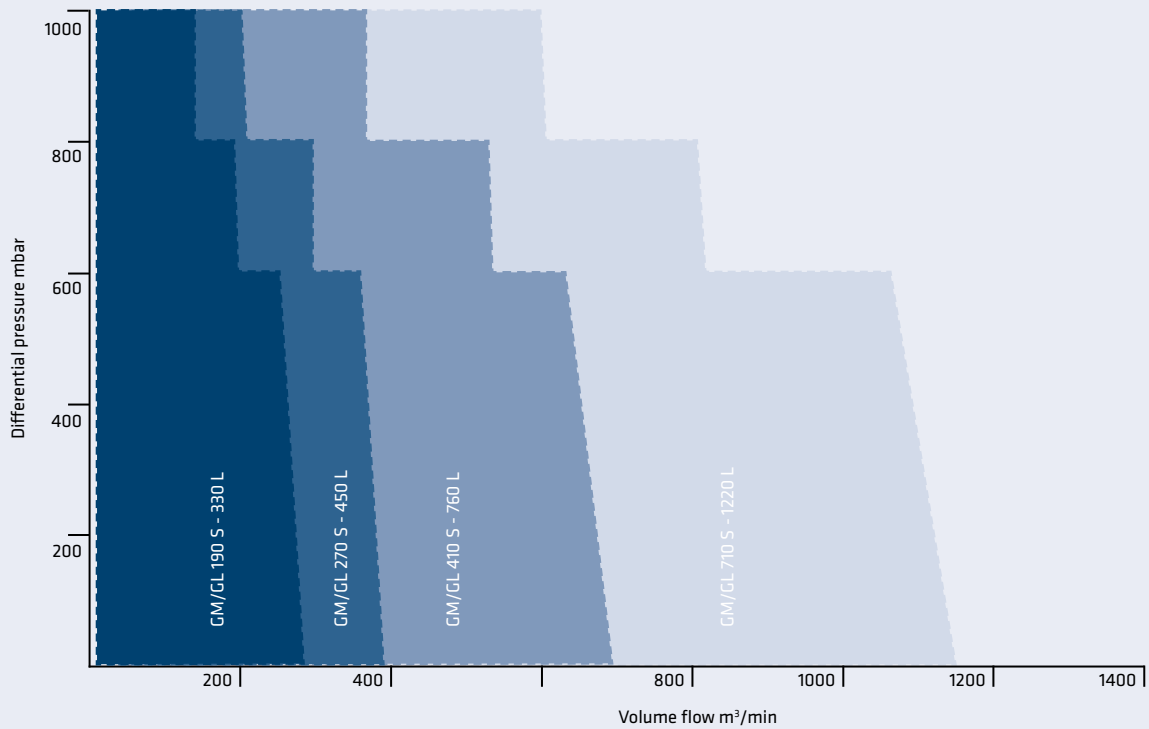
\*Vertical \*\*Horizontal

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.)  
Volume flow corresponds to volume flow rate converted to inlet conditions (sometimes also called FAD).

### Explanation of model names.



### Alpha Blower – Fields of application.



# 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

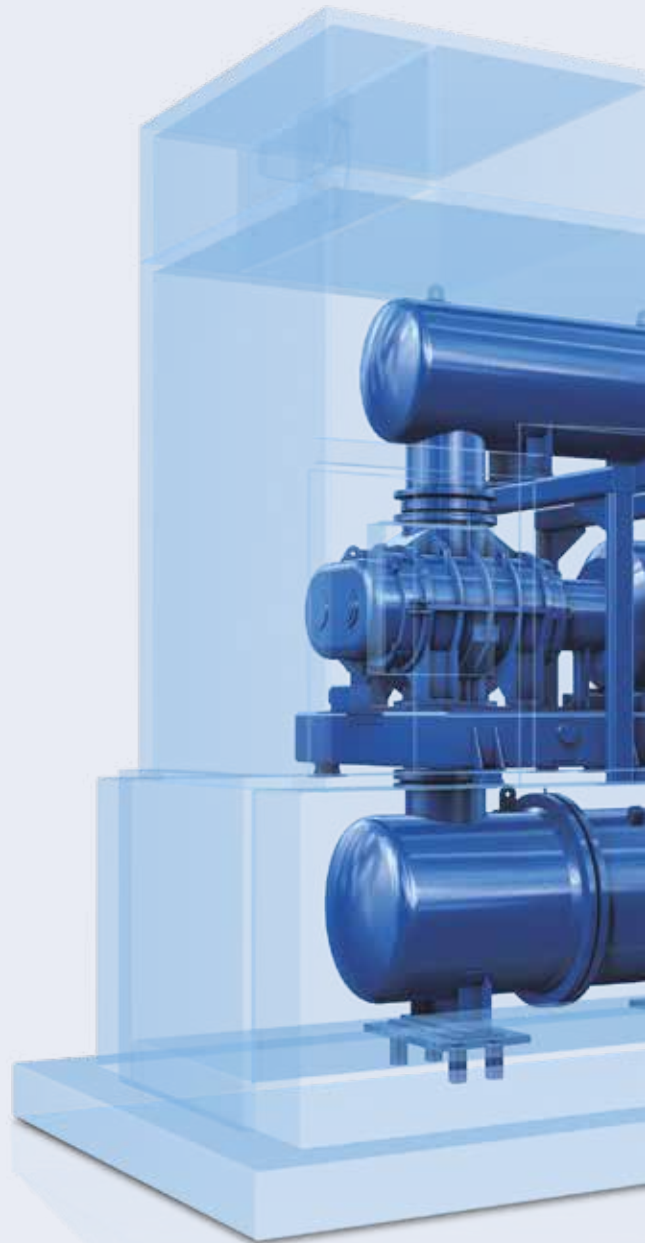
- Strength test
- Leakage test
- Vibration measurement during test run
- Performance test

### 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

# ANYTHING BUT ORDINARY. THE WORLD OF AERZEN SERVICES.

**AERZEN machines are legendary for their durability. Why is service necessary at all, then? Because it's about more than availability and OEM-original parts. AERZEN services ensure investments and productivity, and therefore a decisive advantage against the competition. From anywhere on earth.**

*Benefit from AERZEN's OEM competence, anytime and anywhere*



## **Service. Worldwide proximity to the customer.**

Service must be available, even when its not required. Our service teams look after your machines for the duration of their life cycle, protecting the long-term value of your investment. We have developed a wide network for customers around the world, with more than 45 subsidiaries and representations in more than 100 countries. We are always nearby. You can rely on us: One of our 100 service technicians is always there to assist you when required.

## **Original parts – a must have.**

Only 'Original Equipment Manufacturer' (OEM) parts can guarantee a necessary replacement. Despite standardisation in part designations, differences in construction can, in the worst case, drastically reduce a given unit's lifetime. With OEM parts you play it safe – every time!



### **Global Contact**

AERZEN's team of 2,000 employees is active on every continent. With six sales offices in Germany alone, we are always nearby. And with more than 45 subsidiary companies spread across 100 different countries, we are never far away should you need us. Call us at:

**+49 5154 81-0**

### **Service Hotline**

We are available even outside of our normal business hours. Connect directly with AERZEN via our regional service hotlines:

**0700 49318551**

### **Customer Net**

Looking to learn more about our company and about AERZEN's industry-leading compressor technology? It's easy with Customer Net, which you can access from our homepage. Everything you need to know in one place: [www.aerzen.com](http://www.aerzen.com)



**AERZEN. Compression - the key to our 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, rotary piston gas meters, screw compressors, and Turbo blowers. AERZEN is among the undisputed market leaders in many areas of application.

At our 45 subsidiaries around the world, over 2,000 experienced employees are working hard to shape the future of compression 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, stability of value and efficiency. Go ahead - challenge us!

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**AERZEN**  
EXPECT PERFORMANCE