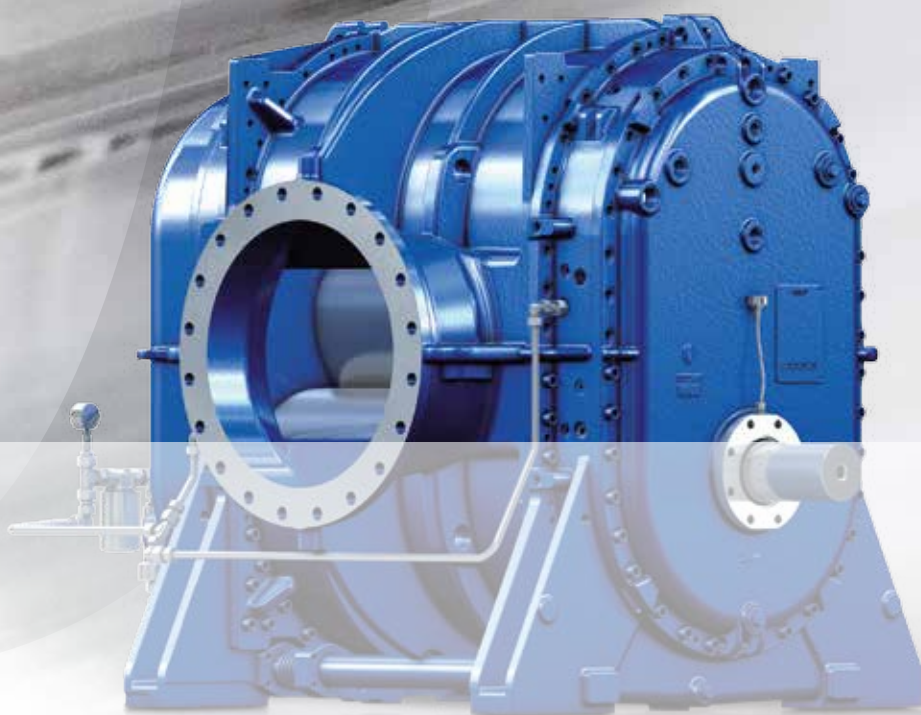


# **AERZEN ALPHA BLOWER**

## **MODULAR SYSTEM FOR LARGE BLOWERS**

Oil-free. Pressure range up to 2 bar (a). Volume flow 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 the most efficient large blowers made by AERZEN is: It is always the right size. This means that AERZEN provides you with the right blower size for each individual application. Thanks to the Alpha Blower as new modular system, for the first time, you have the choice between 26 different types. Perfect for a safe and highly efficient operation of your process air applications.**

### **Technologies made by AERZEN for each application.**

Wherever quality, reliability and machine safety are required, e.g. in case of critical processes or difficult ambient conditions, AERZEN offers a solution tailored to each individual application. The new, robust and energy-efficient Alpha Blowers are a result of AERZEN's professional know-how and gained experience from the last 150 years. The combination of proven technology and new modular principle offers 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 with overpressure or negative pressure. The bulk material is, hereby, conveyed in piping by means of the volume flow of blowers. AERZEN largest machines are installed, e.g. in lifting systems. They unload transport vessels with an hourly performance of up to 1,000 tons.



*Plant for pneumatic conveying of bulk materials*

### **AERZEN in the field of oxygen production.**

Air separation is a very complex process. Nowadays, modern plants work according to cyclic pressure swing adsorption-/desorption technique. In this case, the adsorption capacity of molecular filters is used. This is the principle of separation: The air is conveyed into a tank, filled with adsorption material zeolite. Then, the air separates from the nitrogen. The result is 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 done by means of the proven AERZEN vacuum blowers. To increase productivity and to decrease operational costs, the application of the AERZEN Alpha Blower is the right choice. This type of blower offers robust and long-lasting operation, which stands for an economical compressed air production with high volume flows.



*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 WITH HIGH VOLUME FLOWS. RELIABILITY IN ITS HIGHEST FORM.

The Alpha Blower represents robustness, combined with maximum precision and ultimate safety. This blower has been optimised in terms of flow design and processes. The well-known features have been further improved without neglecting the proven system. Finely graded sizes support the efficiency increase as well as 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 the right size.

## 1 Cylinder with multi-flow principle

- Avoidance of air turbulence on discharge side
- Pulse reduction and reduction of the discharge side Piping noise level by means of soft inlet
- Standard with all 2-lobe machines

### Interference channel

- Proven outlet contour for controlled pulsation reduction by means of defined backflow of gases
- Standard with all 3-lobe machines

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

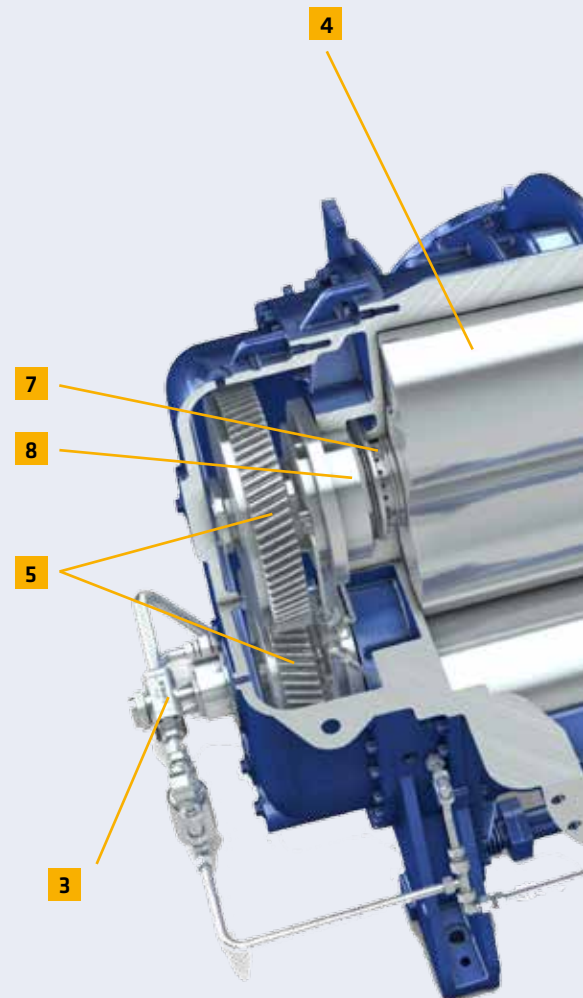
- Incl. machinery mounting foot for a safe position
- Sufficiently dimensioned oil reservoir integrated in the mounting foot
  - ⊕ No additional oil reservoir necessary
- Enhanced damping properties by direct derivation of bearing forces into the foundation
- Highest safety against cracking by improved material properties in terms of ductility
  - ⊕ No flaking of housing parts possible

## 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)
- Increasing the bearing lifetime
- As option for GM machines (vertical conveying direction) resp. standard with GL machines (horizontal conveying direction)

## 4 Rotors made of nodular iron

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



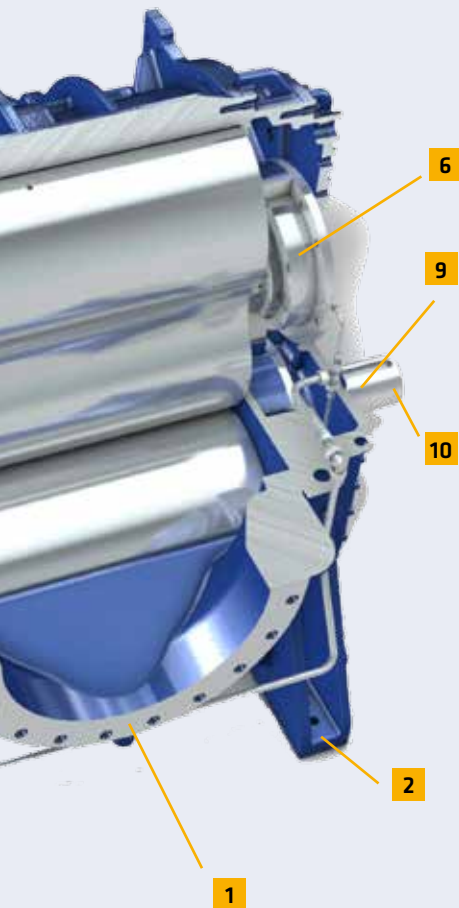
The Alpha Blower is available in 2-lobe or 3-lobe design.

#### Advantages 2-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 3-lobe blower technology

- Low pulsation in the piping
- Reduction of 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 well-known manufacturers
- With a theoretical bearing service life of  $L_{h_{10}} > 40,000$  operating hours
- Recommended AERZEN revision intervals: 5 years

#### 7 Sealing of conveying chamber

- Piston ring labyrinth seal with deaeration and oil repellency for the purity of the process gas
- 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

#### 8 Sealing towards gearbox chamber

- Relief of drive shaft sealing
- Targeted pressure reduction thanks 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 penetrating of foreign particles and leaking of oil

#### 10 One-piece through shaft made of 42CrMo4

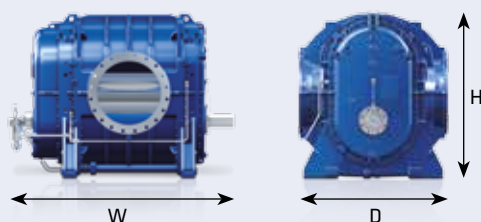
- Low vibration level thanks to high concentricity
- Reduction of the component tolerances thanks to processing of the entire assembly in one clamping
- Increased tightness thanks to ground shaft sleeve for the seal rings
- No breaking off thanks to the consistency of the shaft
- Centred process without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



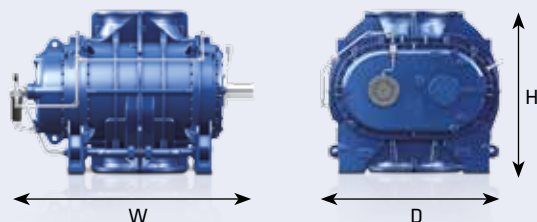
# THE MODULAR SYSTEM.

## A GIANT IN ITS DIVERSITY.

Alpha Blower, type of construction GL



Alpha Blower, type of construction GM



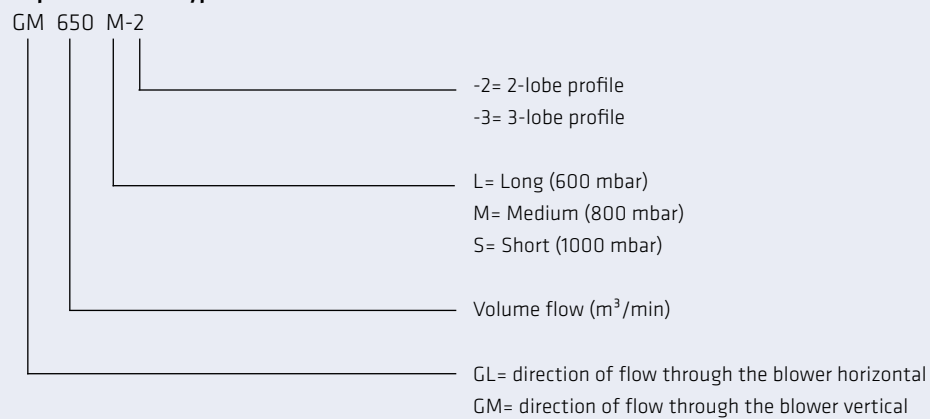
	Designation		Overpressure	Negative pressure		Volume flow	Weight	Width/ Height	Length	DN Discharge side
	Flow direction	Size		[max. mbar]	[max. mbar]					
	M* / L**		[max. mbar]	Without pre-inlet	With pre-inlet	[max. m³/h]		[D x H]	[W]	
G	M	190 S	1000	500	800	11100	1798	1050 x 1000	1687	400
G	L	220 M	800	500	800	12900	1914	1000 x 1050	1787	400
G	M	250 M	800	500	800	15100	2038	1050 x 1000	1912	500
G	L	280 L	600	500	600	16800	2214	1000 x 1050	2112	500
G	M	300 L	600	500	600	18000	2251	1050 x 1000	2077	500
G	L	330 L	600	500	600	19700	2441	1000 x 1050	2177	500
G	M	270 S	1000	500	800	16100	3075	1050 x 1000	1846	500
G	L	310 M	800	500	800	18400	3209	1000 x 1050	1946	500
G	M	340 M	800	500	800	20700	3343	1120 x 1300	2046	500
G	L	380 M	800	500	800	22700	3669	1300 x 1120	2136	600
G	M	420 L	600	500	600	24900	3784	1120 x 1300	2236	600
G	L	450 L	600	500	600	27100	3899	1300 x 1120	2336	600
G	M	410 S	1000	500	800	24300	5191	1120 x 1300	2055	700
G	L	460 S	1000	500	800	27200	5403	1420 x 1559	2155	700
G	M	510 M	800	500	800	30300	5616	1559 x 1420	2265	700
G	L	550 M	800	500	800	33200	5833	1420 x 1559	2365	700
G	M	600 M	800	500	800	36000	6323	1559 x 1420	2465	700
G	L	650 M	800	500	800	38700	6558	1420 x 1559	2565	700
G	M	720 L	600	500	600	43100	6838	1559 x 1420	2723	800
G	L	760 L	600	500	600	45800	7116	1420 x 1559	2823	800
G	M	710 S	1000	500	800	42400	9052	1910 x 1800	2793	800
G	L	820 M	800	500	800	49200	9700	1800 x 1910	2993	800
G	M	940 M	800	500	800	56100	10348	1910 x 1800	3193	800
G	L	990 L	600	500	600	59400	10483	1800 x 1910	3288	1000
G	M	1100 L	600	500	600	66300	11121	1910 x 1800	3488	1000
G	L	1220 L	600	500	600	72900	11759	1800 x 1910	3688	1000

\*Vertical \*\*Horizontal

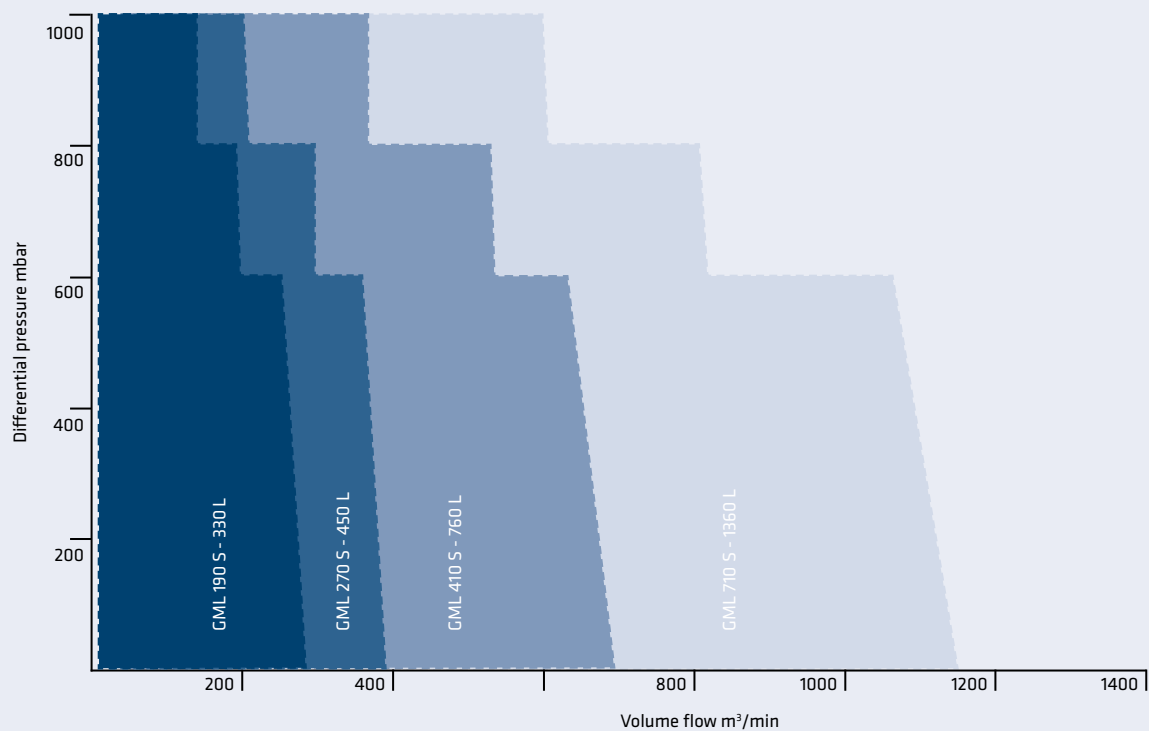
All types are available as two-lobe and three-lobe variant. The data correspond to these variants. (Data and dimensions are not binding. Products subject to technical changes.)

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

### Explanations of type reference.



### Delta Blower – Fields of application.



# CAN BE MODIFIED INFINITELY. MODULAR & PERFECTLY CUSTOMISABLE.

**Alpha Blower - as individual as never before. Besides the variations of sizes numerous modifications and a wide spectrum of accessories round off the AERZEN modular system. Thus, AERZEN assures you a maximum of individualisation. These options make the Alpha Blower a real solution provider - for each customer 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 monitoring by means of temperature sensors on the outer races of the roller bearings used
- Central oil lubrication also available for GM versions

### AirSilence

- Reduction of pulsation by means of attenuation of differential pressure between intake and system pressure
- Only available for 2-lobe blowers

### Pre-inlet

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

### Tests & inspections of the stage

- Strength test
- Leak test
- Vibration measurement during test run
- Option: First oil filling with Delta Lube

### Certificates

- A.o. balancing reports
- Class 0-certificate
- 3.1 certificates

### Farbe

- Colour deviating from RAL 5001
- Varnishing in SikaCor for onshore and offshore applications







## ASSEMBLY MODIFICATIONS

### Acoustic hood

- Internal installation
- External installation
- Finish SikaCor for special ambient conditions
- Deviating colour of standard RAL 5001

### Accessories for the assembly

- Suction and discharge sided silencer
- Deviating colour of standard RAL 5001
- Flexible piping connection possibilities of the customer piping, e.g. axial compensator
- Maintenance indicator for filter monitoring
- Pressure gauges
- Temperature sensors
- AERZEN control
- Electrically operated start unloading device

### Motor

- Three phase a.c. motors according to GB18613-2012 for 50/60 Hz-networks and different medium and high volt.
- Motors in conformity with ATEX
- Customer motors
- Diesel engines

### Tests & inspections of the whole packaged unit

- Strength test
- Leakage test
- Test run witnessed by the customer
- Function test
- Sound measurement
- Finish test

### Base frame

### Certificates

- Material and calibration certificates among others
- ATEX

# ANYTHING – BUT ORDINARY. THE SERVICE WORLD OF AERZEN.

The long lifetime of AERZEN machines is legendary. Why has service to be provided at all? Because it concerns more than availability and OEM-original parts. The AERZEN services ensure investments, productivity, the decisive advantage in the competition. All on a worldwide basis.

*Use the OEM-competence of AERZEN – at any time and anywhere.*



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

Service must be available. Also even it does not have to be. Our service teams look after your machines covering the total lifecycle and, consequently, protect the long-term value of your investment. We have a strong network for you around the world. From more than 45 subsidiaries and representations in more than 100 countries. Thus, the distances are short to you. You can rely on us: One of our 100 service technicians is always there to assist you – if, nevertheless, he is required.

## **Original parts – a must have.**

Only the parts „Original Equipment Manufacturer“ (OEM) precisely ensure the necessary replacement. Despite of standardisation of the designations, there are constructive differences, which, in the worst case, can drastically reduce the lifetime. With OEM-parts you are on the safe side. In any case!

**Contact worldwide**

2.000 employees are employed by AERZEN worldwide. On every continent, In Germany alone, we are available with six sales offices. In addition to more than 45 subsidiaries in more than 100 countries. This means we do not have to travel far. If you need us, just call:

**+49 5154 81-0**

**Service-Hotline**

We are even there for you outside normal office hours. Call AERZEN directly via our regional service hotlines:

**0700 49318551**

**Customer Net**

Where can you find out more about our company and the leading compressor technologies from Aerzen? Simple: using our Customer Net, which you can access from our homepage. We have gathered together everything you need to know here:

**[www.aerzen.com](http://www.aerzen.com)**



**AERZEN. Compression - the key to success.**

Aerzener Maschinenfabrik was founded in 1864. In 1868, we built the first positive displacement blower in Europe. In 1911, the first turbo blowers followed, in 1943 the first screw compressors and in 2010 the first rotary lobe compressor package of the world. Innovations made by AERZEN continue to keep driving the development of the compressor technology. Now AERZEN counts among the oldest and most important manufacturers of positive displacement blowers, rotary lobe compressors, rotary piston gas meters, screw compressors and turbo blowers. And in many fields of application AERZEN counts among the uncontested market leaders.

In more than 45 subsidiary companies around the world more than 2,000 experienced colleagues are working intensely on shaping the future of compression technology. Their technical competence, our international network of experts and the continual feedback from our customers are the basis of our success. AERZEN products and services set standards. In particular, with regard to reliability, stability of value and efficiency. Challenge us.

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**AERZEN**  
EXPECT PERFORMANCE