

POSITIVE DISPLACEMENT BLOWERS

DELTA BLOWER GENERATION 5

Volume flows from 30 m³/h to 15,000 m³/h



AERZEN

DELTA BLOWER.

A TOUGH ENDURANCE RUNNER IN
COUNTLESS COMPRESSION
PROCESSES.



Delta Blower Generation 5

Positive displacement blowers of the Delta Blower Generation 5 act as the driving force behind many processes, and are the beating heart of a strong machine combination. This generation of assemblies from AERZEN compresses more than 150 years of experience as world market leader in blower development. And it is more innovative than ever. AERZEN has introduced many innovations with this young series. They stand for Blower

Power in the oil-free transport of air and neutral gases. They provide a large volume-flow range from 30 to 15,000 m³/h. With reduced life-cycle costs. For easier handling. For even quieter operation. But one thing remains the same: This blower class remains highly robust, thoroughly reliable and has an extremely long service life. No wonder then that customers choose it for continuous, long-term applications - over years and decades.



UNIVERSAL GENIUSES FOR EACH APPLICATION.

The versatile compact power packages of the Delta Blower series can be used in all climate zones of the world. Just as safe under the most difficult environmental conditions as in indoor installation. They work stand-alone or in a machine combination. In earthquake areas as reliable as with ship or other mobile installations.

Versatility in figures.

Delta Blowers are strong all-rounders: The smallest assemblies are mounted on silo trucks. The largest machines operate in lifting systems. They unload transport vessels. With an hourly performance of up to 1,000 tons.



Control range between 25 % and 100 %



Volume flows from approx. 30 to 15,000 m³/h



Pressures up to 1,000 mbar
Negative pressures down to -500 mbar



Nominal diameters DN 50 to DN 400

Applications

- Water and Waste water treatment
- Aeration
- Backwash of filters
- Pneumatic conveying of bulk materials
- Gas conveying

- Degassing
- Dedusting
- Generation of negative pressure
- Biogas treatment
- Vehicle operation
- Ship unloading
- Tunnel boring and much more

Industries

- Wastewater treatment plants
- Chemistry and process engineering
- Power plant
- Cement and lime
- Foodstuff technology
- Paper industry
- Pharmacy and many more

Goods conveyed

- Granules
- Sugar
- Cement
- Cereals
- Carbon and much more



Indispensable for power plant technology



Conveying of powdery goods



Powerful for ship loading and unloading

MACHINES AND SERVICES FROM AERZEN. IN USE WORLDWIDE AND HIGHLY AVAILABLE.

The extremely high load capacity of Delta Blower packages is legendary. Just like their already proverbial reliability, their durability or their intelligent operating and maintenance concept. Why are the services of AERZEN an issue at all? Because service is a must. And because our worldwide wellpositioned service teams are an important decision criterion for plant operators: for blowers made by AERZEN.

*It's the inner values that matter:
the AERZEN blower stage*



High availability.

The best blower packages are those that you do not notice. Because they are steadfast in their work. For years and decades. The Delta Blowers from AERZEN are such assemblies. Their proven robust nature and durability have a reason.

AERZEN manufactures all core components itself. From the assembly to the control system. From the idea to engineering and configuration. And thus ensures the high productivity of its machines. Our value contribution to the quality standard made in Germany.

On site worldwide.

Typical for AERZEN: The reliable availability of its solutions. This refers to our machines. And to our services. The fact that our service teams look after your systems over their entire life cycle protects the value of your investment. The fact that we have a dense network of 50 subsidiaries and agencies in more than 100 countries around the globe guarantees short distances. So we are quickly there for you - in case we are needed.

Safely AERZEN.

- Commissioning by qualified personnel
- Individual training of your specialist personnel
- Customer-specific service and maintenance contracts
- Machine revision also directly on site

Intelligently designed.

What does compact, easy handling or ease of maintenance mean? The value of these promises only becomes apparent in everyday practice. And there they cannot be weighed out with gold. Just like these tangible benefits:

- Small footprint
- Flexible machinery mountings
- Easy to transport with forklift/lift truck
- Space-saving side-by-side installation

- Plug&play installation and commissioning
- Easy access to all wearing parts
- Oil level check from the outside while the machine is running
- Maintenance work such as oil and filter change from the front
- Low sound pressure level
- Belt drive for optimum volume flow design, subsequent power adjustment is quick and easy

Intelligent silencing: the AERZEN discharge silencer without absorption material



100 % clean.

How do we offer food suitability, avoid expensive cleaning or even production restrictions? We do not use absorption material for sound absorption. "Therefore, AERZEN made the base support a discharge silencer and reduces the noise exclusively by means of air deflections.

100 % free of absorption material, because this could wear out and contaminate the downstream system. By the way, the AERZEN base support is patented and certified as spark arrester for ATEX applications.

BLOWER IS BLOWER?

THIS IS THE END OF PREJUDICES.

AERZEN belongs to the most innovative companies worldwide in the field of compressor technology. In 1868, we started manufacturing positive displacement blowers. By the way, we were the company that manufactured the first positive displacement blower in Europe. Since then, we have taken the performance features of this technology to the peak with every generation. Let yourself be surprised. Discover these special blowers: Delta Blower Generation 5.

Extremely robust blower package

- For a wide range of applications within a high control range from 25 to 100%
- Various modifications are possible

Compact design

- Space-saving side-by-side installation
- Small dimensioning of machine rooms

Easy operation and low-maintenance design

- Highly available at continuous operation even under toughest environmental conditions
- The front side is used for operation and maintenance

Plug&play Solution

- Completely configured, parameterised and ready for connection
- Integrated service kit with first oil fill

Oil-free as per class 0

- According to ISO 8573-1, certified by the TÜV (German technical inspection association)

Free from absorption material

- Suitability for use with foodstuffs in the pneumatic conveying of bulk materials (no impurities)
- Safety for energy-efficient productivity in the Water treatment (no sedimentation of absorption material in the aeration plates, no clogging of the aeration plugs, no pressure loss)

Integrated power supply panel (optional)

- Frequency converter, star-delta, direct, softstarter
- Intelligent AERZEN AERtronic control system

Smart oil system

- Oil level check while machine is running
- It can be read from the outside
- Oil instead of grease: Oil-lubricated bearings increase the service life



Advantages for the life cycle assessment

- Standard use of energy-efficient motors of class IE3
- Suction on the cold side of the assembly
- Base package to be found in a highly efficient machine combination of AERZEN rotary lobe compressors und AERZEN turbo blowers
- Belt drive for optimal volume flow design
- Subsequent power adaptations are easily and quickly possible

Belt tensioning hinged motor mounting plate

- Fully automatic and maintenance-free belt tension
- Inspection of V-belt tension no longer necessary
- Easy assembly or replacement of V-belts

Multifunctional hoist for hinged motor mounting plate

- Transport safety lock
- Easy and safe assembly of V-belts
- Mobile installation of assemblies (e.g. ship installation/earthquake design)
- Hinged motor mounting plate support for heavy motors

Low noise level

- Safe observance of the sound values, close to building areas and production areas
- Lowest sound values by optimised acoustic hood
- Integrated method for reducing pulsation (Patented AERZEN blower stage)

PED pressure-vessel guidelines approval (pressure safety valve)

- for overpressure operation

ATEX-compliant

- AERZEN base supports certified as spark suppressor for ATEX applications

TÜV-certified zone separation filter (optional)

INTERESTED IN THE INNER VALUES? CONSTRUCTION AND DESIGN.

It is good to know what is in the assemblies of the Delta Blower line from AERZEN:

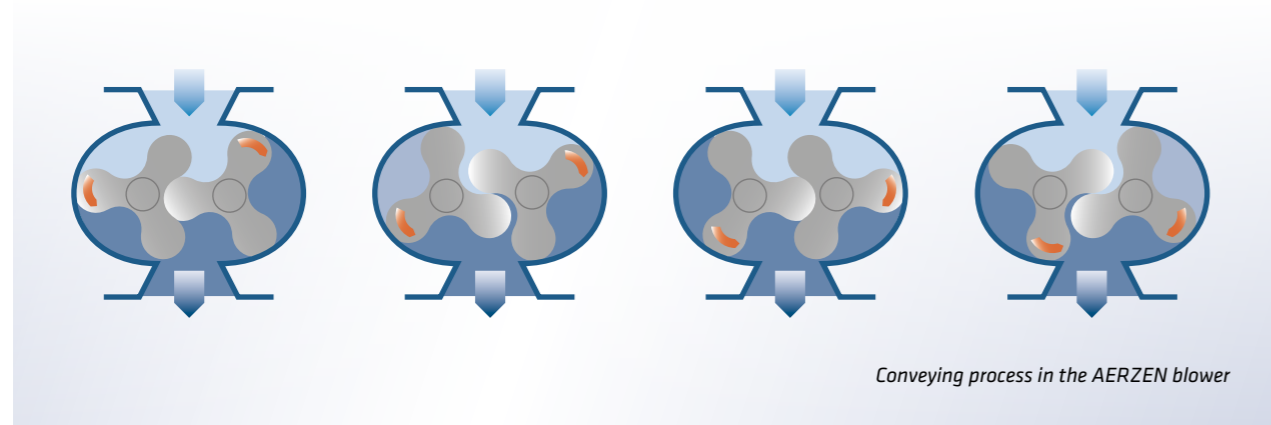
The wealth of experience of the world market leader. The quality standard of the traditional German family business. The innovation goal "Best solution provider for our customers".

In addition first-class material selection. And a principle that has proven itself in tens of thousands of applications: Roots.

Innovation pulsation reduction.

Especially for its Delta Blower stages AERZEN has developed a unique process and integrated it into all sizes: the pulsation reduction. The patented AERZEN process prevents pulsations and noise already at the origin within the blower stage. For this purpose the AERZEN blowers equipped with 3-lobe

pistons have two special channels cast in the cylinder. These control the backflow of the medium into the conveying chamber in such a way that the typical backstroke and squeezing pulses (typical for 2-lobe blowers) are eliminated. The end for pulsations due to patented interference method.



Intelligent technical details ensure that the Delta Blower packages retain their value. One example of many: the patented pulsation reduction, an AERZEN innovation for longer bearing life.

Blower stage

- AERZEN Blowers with 3-lobe pistons and integrated pulsation reduction
- Housing consisting of: Cylinder (with two cylinder with cast-in pre-inlet channels at discharge side to minimise the sound by pulsation reduction), wheel housing, housing cover and side plates
- Material EN-GJL-200
- Ribbed surfaces

Pistons

- Sizes GM 3 S to GM 130 L: Pistons and shafts in one piece
- Sizes GM 150 S to GM 240 S: Pistons made of nodular cast iron, shafts made of tempered steel

Drive type

- Overhung via narrow V-belt
- Direct drive

Cooling

- Convection cooling

Lubrication

- Oil splash lubrication for bearings and timing gears

Oil-free conveying

- The oil-free design according to ISO 8573-1 class 0 is guaranteed by the piston ring labyrinth seal, which has proven itself over decades, in combination with neutral chambers (open to the atmosphere)

Timing gears

- Hardened and ground, helically geared and made of case-hardened steel
- They are fitted to the shafts by taper interference fit
- maximum running smoothness and service life

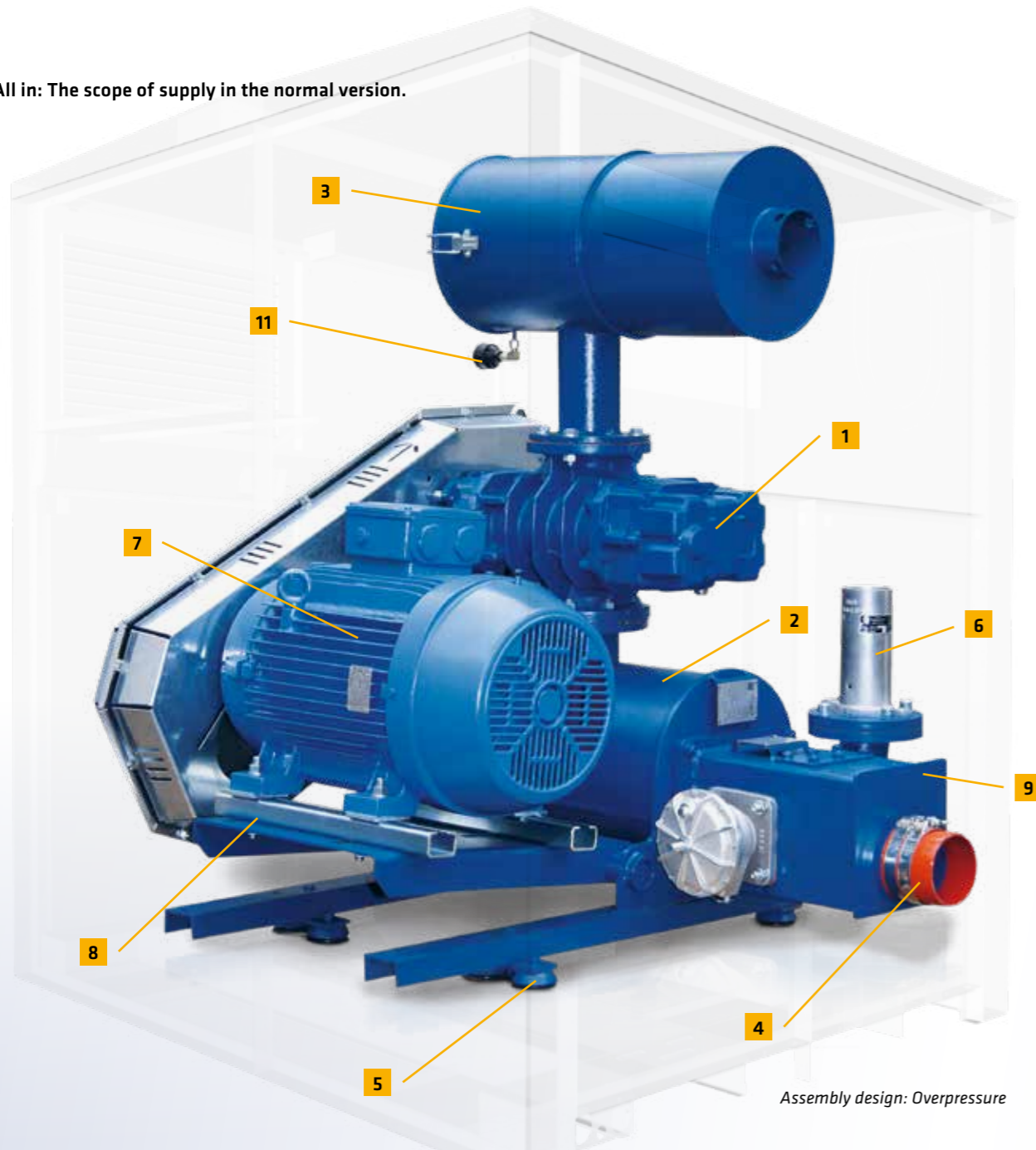


It's the inner values that matter: the AERZEN blower stage

ALREADY IN THE STANDARD VERSION EXTRAORDINARY. THE DELIVERY CONCEPT OF AERZEN.

Some call it comfortable. The others efficient. We call it all-in: the delivery concept of AERZEN. When the Delta Blower package comes to you, it is already completely configured, parameterised and mounted ready for connection at the factory. Naturally, this is tailored to your processes. Including all standardised accessory components for trouble-free operation at the touch of a button.

All in: The scope of supply in the normal version.



Assembly design: Overpressure

- 1 3-lobe blower stage**
- With integrated pulsation reduction (see page 10/11)



- 8 Hinged motor mounting plate**
- Automatic tensioning device for the belt drive
 - Multifunctional hoist for hinged motor mounting plate



- 2 Base supports with integrated discharge silencer**
- Certified as spark arrester
 - Absorbent-free silencing through patented discharge silencer

- 9 Connecting housing**
- integrated check valve

- 3 Intake silencer with integrated air filter or strainer**
- Standard suction from the atmosphere (overpressure)
 - Suction via piping optional (standard for negative pressure)
 - Suction via filter element for negative pressure optional



Overpressure

Negative pressure

- 10 Integrated blow-off silencer**
- Horizontal version (up to DN 125)

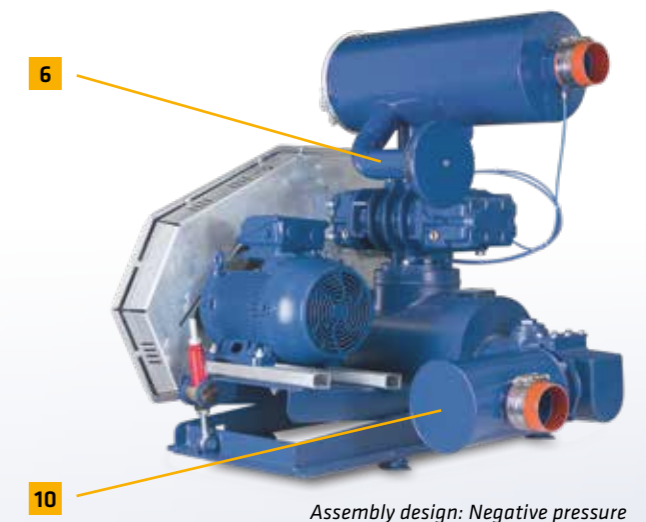
- 11 Standard instrumentation**
- Pressure gauge for indication of the conveying pressure (overpressure)
 - Maintenance indicator for monitoring the intake filter (overpressure)
 - Vacuum meter for indication of the conveying pressure (negative pressure)

- 4 Flexible rubber sleeve**
- with clamps

- 5 Flexible machinery mountings**
- For the decoupling of structure-borne noise

- 6 Pressure valve or suction valve**
- For machine protection

- 7 Drive**
- Via high-performance narrow V-belt drive by means of three-phase motor
 - Standard use of energy-efficient class IE3 motors (up to motor size 315)



Assembly design: Negative pressure

MODIFICATIONS AND ACCESSORIES. THE BEST FOR EVERY APPLICATION.

Added value: The accessory components.

- Acoustic hood for indoor and outdoor installation, forced ventilation via mechanical fan
- Start unloading device, required for star-delta starting of the motor (overpressure),
- Vertical blow-off silencer with base plate (negative pressure)
- discharge side expansion joint instead of flexible rubber sleeve
- Power cabinet Star-delta, frequency converter, soft starter
- AERZEN AERtronic blower control
- AERZEN original spare parts
- Other accessories on request



AERZEN Start unloading device

Modifications.

- Special motors
- special varnish
- ATEX compliant design
- Acoustic hood for desert installation with special sand collector
- Acoustic hood for low temperatures down to minus 40°C with heating and gravity louvers
- Acoustic hood for earthquake resistance and increased wind loads
- Ship installation and vehicle deployment
- Use for special gases through the use of special materials
- Customised documentation
- Compliance with legal requirements for delivery e.g. in Eurasian customs union



Always the safe choice: ATEX compliant design from AERZEN

The new AERtronic - the way into the digital future.

The new edition of the AERtronic control system offers a user-friendly and clear possibility for the analysis and processing of relevant process parameters and thus provides more transparency, safety and efficiency. All measured values converge in the new control system and can be transferred to the production control system via common interfaces in order to always operate the plant at the optimum operating point. The AERtronic is available in three versions:

Basic: As a fully digital display instrument

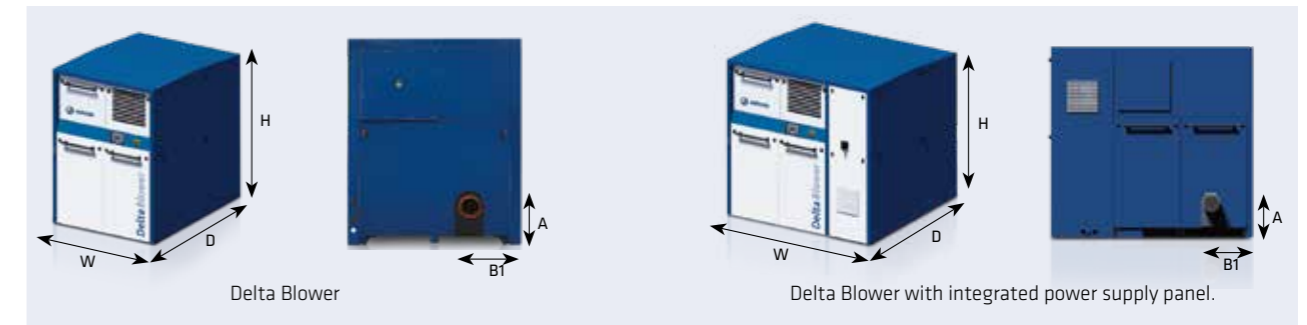
Advanced: For active process control

Premium: As an intelligent interface with cloud compatibility.



COMPACT DESIGN. CAN BE SET UP SIDE-BY-SIDE, OF COURSE.

Dimensions and weights (subject to technical changes - product is subject to technical change).



Delta Blower.

Type	W mm	D mm	H mm	A mm	B1 mm	Nominal diameter DN	Weight without acoustic hood kg	Weight with acoustic hood kg
GM 3 S	800	800	1,055	228	245	50	148	212
GM 4 S	925	1,135	1,280	258	258	80	207	299
GM 7 L	925	1,135	1,280	258	258	80	212	304
GM 10 S / DN 80	925	1,135	1,280	258	258	80	236	328
GM 10 S / DN 100	1,250	1,350	1,500	294	375	100	336	496
GM 15 L	1,250	1,350	1,500	294	375	100	351	511
GM 25 S	1,250	1,350	1,500	294	375	125	407	567
GM 30 L	1,500	1,800	1,900	356	435	150	690	1,020
GM 35 S	1,500	1,800	1,900	356	435	150	780	1,110
GM 50 L	1,700	2,055	2,111	357	525	200	905	1,475
GM 60 S	1,700	2,055	2,111	357	525	200	1,035	1,605
GM 80 L	1,900	2,200	2,308	456	600	250	1,550	2,200
GM 90 S	1,900	2,200	2,308	456	600	250	1,620	2,270
GM 100 S	1,900	2,200	2,308	456	600	250	1,820	2,470
GM 130 L	2,100	2,850	2,345	410	635	300	2,436	3,410
GM 150 S	2,100	2,850	2,345	410	635	300	2,796	3,750
GM 220 L *	2,800	4,304	3,500	410	800	400	4,981	8,240
GM 240 S *	2,800	4,304	3,500	410	800	400	5,371	8,630

* Design in Compact IV


Weights without motor and belt drive

Delta Blower with integrated power supply panel.

Type	W mm	D mm	H mm	A mm	B1 mm	Nominal diameter DN	Weight with acoustic hood kg
GM 10 S	1,850	1,350	1,500	294	375	100	619
GM 15 L	1,850	1,350	1,500	294	375	100	661
GM 25 S	1,850	1,350	1,500	294	375	125	717
GM 30 L	2,100	1,800	1,900	356	435	150	1,322
GM 35 S	2,100	1,800	1,900	356	435	150	1,412
GM 50 L	2,300	2,055	2,111	357	525	200	1,825
GM 60 S	2,300	2,055	2,111	357	525	200	1,955


Weights without motor, power electrics and belt drive

DELTA BLOWER IN FIGURES. SIZES AND PRESSURE RANGES.



Type	Positive displacement blower
Design	Overpressure
Volume flow	30 bis 14,640 m ³ /h
Overpressure	up to 1,000 mbar
Conveying medium	Air, Neutral gases
Handling	oil-free

Figure:
Delta Blower GM 25 S - Assembly without acoustic hood



Type	Positive displacement blower
Design	Negative pressure
Volume flow	30 to 15,000 m ³ /h
Overpressure	down to -500 mbar
Conveying medium	Air, Neutral gases
Handling	oil-free

Figure:
Delta Blower GM 15 L - Assembly without acoustic hood

Performance data - DELTA BLOWER - overpressure operation

Blower size	Differential pressure	Volume flow max. m ³ /h *	Motor rating max. kW	Sound pressure level max. dB(A) **
	max. mbar			
GM 3 S	1,000	240	11	70
GM 4 S	1,000	334	15	70
GM 7 L	700	488	15	70
GM 10 S / DN 80	1,000	600	30	72
GM 10 S / DN 100	1,000	684	30	72
GM 15 L	700	1,020	30	72
GM 25 S	1,000	1,446	55	73
GM 30 L	700	2,058	75	75
GM 35 S	1,000	2,388	90	75
GM 50 L	700	3,288	90	76
GM 60 S	1,000	3,528	132	78
GM 80 L	700	4,968	160	80
GM 90 S	1,000	5,352	200	81
GM 100 S	1,000	6,288	250	82
GM 130 L	700	7,920	250	84
GM 150 S	1,000	9,000	355	84
GM 220 L	600	12,570	315	84
GM 240 S	800	14,640	500	86

* 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%])

** Machine noise at a distance of 1m with acoustic hood and connected, insulated pipe, tolerance ± 2 dB(A)

Further pressure ranges can be requested for the AERZEN spectrum. Extensive performance data charts can be found in our Customer Net.

Performance data - DELTA BLOWER - negative pressure operation

Blower size	Differential pressure	Volume flow max. m ³ /h *	Motor rating max. kW	Sound pressure level dB(A) **
	max. mbar			
GM 3 S	-500	250	7.5	68
GM 4 S	-500	340	7.5	70
GM 7 L	-500	520	11 - 18.5	70
GM 10 S / DN 80	-500	600	15 - 37	70
GM 10 S / DN 100	-500	730	15 - 37	70
GM 15 L	-500	1,080	22 - 37	73
GM 25 S	-500	1,510	30 - 55	73
GM 30 L	-500	2,120	45 - 90	75
GM 35 S	-500	2,420	55 - 90	75
GM 50 L	-500	3,450	75 - 250	78
GM 60 S	-500	3,640	75 - 250	78
GM 80 L	-500	5,150	110 - 250	80
GM 90 S	-500	5,600	110 - 250	80
GM 100 S	-500	6,600	110 - 250	80
GM 130 L	-500	8,070	400	82
GM 150 S	-500	9,700	400	82
GM 220 L	-500	12,800	400	82
GM 240 S	-500	15,000	400	80

* 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%])

** Machine noise at a distance of 1m with acoustic hood and connected, insulated pipe, tolerance ± 2 dB(A)

Further pressure ranges can be requested for the AERZEN spectrum. Extensive performance data charts can be found in our Customer Net.

MATURED TO PERFECTION IN 150 YEARS: THE SERVICE WORLD OF AERZEN.

The best kind of service is the kind you don't need. But every technology involves wear and tear. Our machines are designed to do their job for as long and efficiently as possible. If necessary, for decades. The goal of AERZEN Services is to extend service life and availability – simple added value for your investment!

Benefit from AERZEN OEM competence - at any time and anywhere



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

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

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

With your OEM's best recommendations.

We have been manufacturing quality products for over 150 years. At the same time, we also developed a corresponding service world. With tailor-made offers for every phase of your machine's lifespan. With OEM original parts, reliable logistics and excellent service at its core. And with decentralised service centres in your vicinity, which guarantee fast provision of spare parts and competent service - 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 do it? 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.

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, 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, stability of value and efficiency. Go ahead - challenge us!



**FIND YOUR
LOCAL CONTACT**

www.aerzen.com/worldwide



Aerzener Maschinenfabrik GmbH
Reherweg 28 - 31855 Aerzen / Germany
Telephone: +49 5154 81 0 - Fax: +49 5154 81 9191
info@aerzen.com - www.aerzen.com



AERZEN
EXPECT PERFORMANCE