Positive Displacement Blower
Delta Blower Generation 5

Volume flows from
30 m^3/h to 15,000 m^3/h

AERZEN
EXPECT PERFORMANCE

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 se-ries. They stand for Blower Power in the oil-free transport of air and neutral gases. They provide a large volume-fow range from 30 to 15,000 m 3/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 m^3/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

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.

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

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.

Intelligent silencing: the AERZEN discharge silencer without absorption material

Made in Germany

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

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 oughest 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

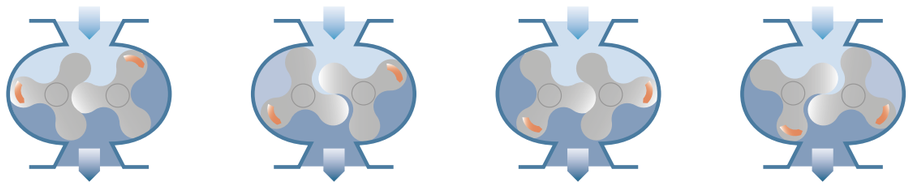
TÜV-certified zone separation filter (optional)

Interested in the inner vales?
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.



Conveying process in the AERZEN blower

!

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

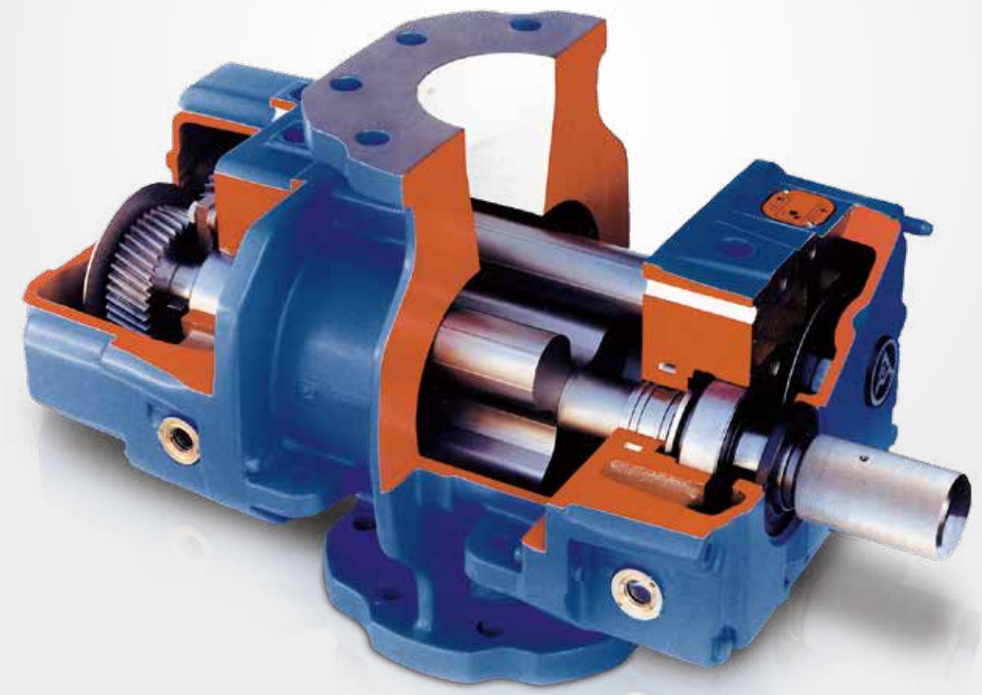
Cooling
- Convection cooling

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

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.



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.

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

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

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

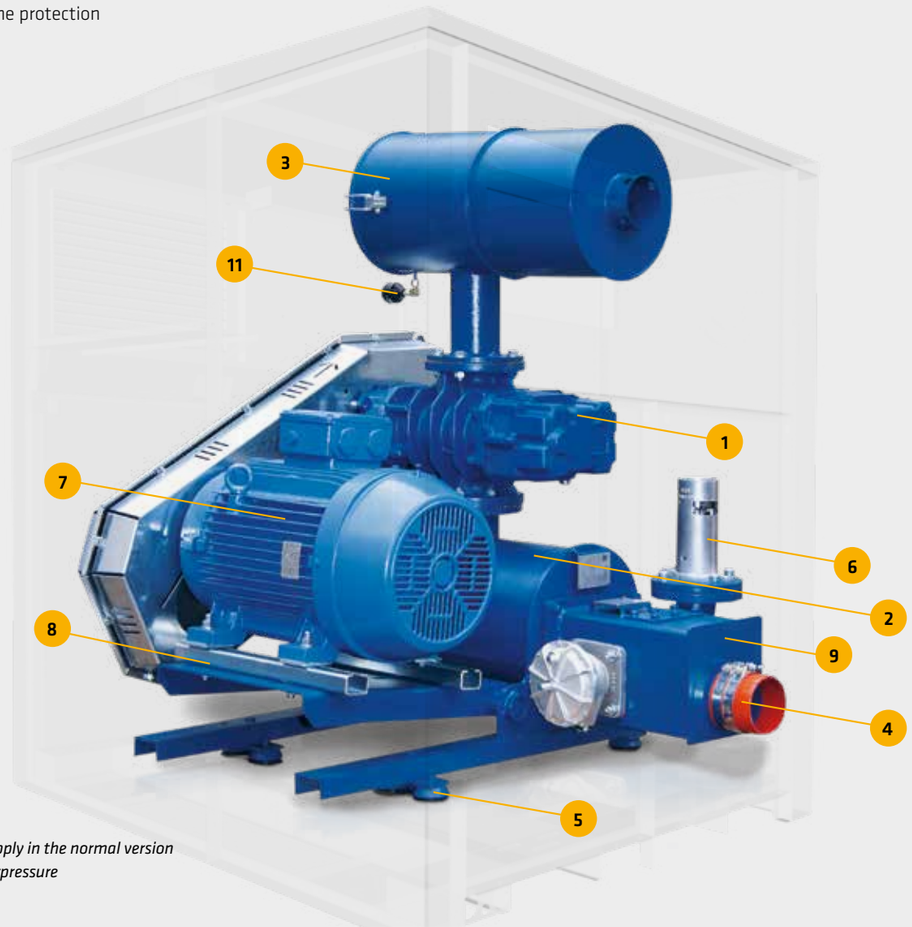
Negative pressure

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)



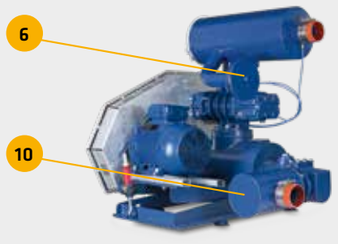
All in: The scope of supply in the normal version
Assembly design: Overpressure

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

9 Connecting housing
- integrated check valve

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)



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

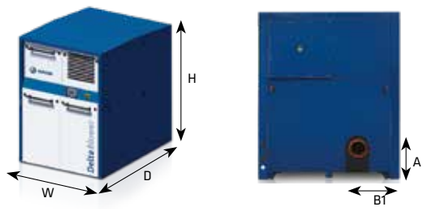
The new AERtronic - the way into the digital future

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:

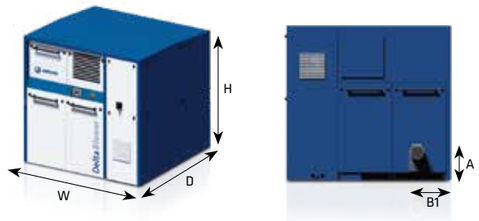
Basic: As a fully digital display instrument
Advanced: For active process control
Premium: As an intelligent interface with cloud compatibility.

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



Delta Blower with integrated power supply panel

Delta Blower

Type	W		D		H		A		B1		Nominal diameter DN	Weight without acoustic hood		Weight with acoustic hood	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		lbs.	kg	lbs.	kg
GM 3 S	31	800	31	800	41	1,055	8	228	9	245	50	326	148	467	212
GM 4 S	36	925	44	1,135	50	1,280	10	258	10	258	80	456	207	659	299
GM 7 L	36	925	44	1,135	50	1,280	10	258	10	258	80	467	212	670	304
GM 10 S / DN 80	36	925	44	1,135	50	1,280	10	258	10	258	80	520	236	723	328
GM 10 S / DN 100	49	1,,250	53	1,350	59	1,500	11	294	14	375	100	740	336	1,093	496
GM 15 L	49	1,250	53	1,350	59	1,500	11	294	14	375	100	773	351	1,126	511
GM 25 S	49	1,250	53	1,350	59	1,500	11	294	14	375	125	897	407	1,250	567
GM 30 L	59	1,500	70	1,800	74	1,900	14	356	17	435	150	1,521	690	2,248	1,020
GM 35 S	59	1,500	70	1,800	74	1,900	14	356	17	435	150	1,719	780	2,447	1,110
GM 50 L	66	1,700	80	2,055	83	2,111	14	357	20	525	200	1,995	905	3,251	1,475
GM 60 S	66	1,700	80	2,055	83	2,111	14	357	20	525	200	2,281	1,035	3,538	1,605
GM 80 L	74	1,900	80	2,200	90	2,308	17	456	23	600	250	3,417	1,550	4,850	2,200
GM 90 S	74	1,900	80	2,200	90	2,308	17	456	23	600	250	3,571	1,620	5,004	2,270
GM 100 S	74	1,900	80	2,200	90	2,308	17	456	23	600	250	4,012	1,820	5,445	2,470
GM 130 L	82	2,100	112	2,850	92	2,345	16	410	25	635	300	5,370	2,436	7,517	3,410
GM 150 S	82	2,100	112	2,850	92	2,345	16	410	25	635	300	6,164	2,796	8,267	3,750
GM 220 L *	82	2,800	169	4,304	137	3,500	16	410	31	800	400	10,981	4,981	18,166	8,240
GM 240 S *	82	2,800	169	4,304	137	3,500	16	410	31	800	400	11,841	5,371	19,025	8,630

* Design in Compact IV

Weights without motor and belt drive

Delta Blower with integrated power supply panel.

Type	W		D		H		A		B1		Nominal diameter DN	Weight with acoustic hood	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		lbs.	kg
GM 10 S	72	1,850	53	1,350	59	1,500	11	294	14	375	100	1,364	619
GM 15 L	72	1,850	53	1,350	59	1,500	11	294	14	375	100	1,457	661
GM 25 S	72	1,850	53	1,350	59	1,500	11	294	14	375	125	1,580	717
GM 30 L	82	2,100	70	1,800	74	1,900	14	356	17	435	150	2,914	1,322
GM 35 S	82	2,100	70	1,800	74	1,900	14	356	17	435	150	3,112	1,412
GM 50 L	82	2,300	80	2,055	83	2,111	14	357	20	525	200	4,023	1,825
GM 60 S	82	2,300	80	2,055	83	2,111	14	357	20	525	200	4,310	1,955

Weights without motor, power electrics and belt drive

Delta blower in figures
Sizes and pressures ranges

Type	Positive displacement blower
Design	Overpressure
Volume flow	30 bis 14,640 m³/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

Performance data - DELTA BLOWER - overpressure operation

Blower size	Differential pressure		Volume flow		Motor rating		Sound pressure level
	max. Psi	max. mbar	max. CFM	max. m³/h *	max. hp	max. kW	max. dB(A) **
GM 3 S	14.5	1,000	141	240	15	11	70
GM 4 S	14.5	1,000	196	334	20	15	70
GM 7 L	10.2	700	287	488	20	15	70
GM 10 S / DN 80	14.5	1,000	353	600	40	30	72
GM 10 S / DN 100	14.5	1,000	402	684	40	30	72
GM 15 L	10.2	700	600	1,020	40	30	72
GM 25 S	14.5	1,000	851	1,446	75	55	75
GM 30 L	10.2	700	1,211	2,058	100	75	77
GM 35 S	14.5	1,000	1,405	2,388	125	90	77
GM 50 L	10.2	700	1,935	3,288	125	90	77
GM 60 S	14.5	1,000	2,076	3,528	200	132	80
GM 80 L	10.2	700	2,924	4,968	250	160	82
GM 90 S	14.5	1,000	3,150	5,352	300	200	81
GM 100 S	14.5	1,000	3,701	6,288	350	250	82
GM 130 L	10.2	700	4,661	7,920	350	250	84
GM 150 S	14.5	1,000	5,297	9,000	500	355	84
GM 220 L	8.7	600	7,398	12,570	450	315	84
GM 240 S	11.6	800	8,617	14,640	700	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.

Type	Positive displacement blower
Design	Negative pressure
Volume flow	30 to 15,000 m3/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 - negative pressure operation

Blower size	Differential pressure		Volume flow		Motor rating		Sound pressure level
	max. Psi	max. mbar	max. CFM	max. m³/h *	max. hp	max. kW	dB(A) **
GM 3 S	-7.5	-500	147	250	15	11	68
GM 4 S	-7.5	-500	200	340	20	15	70
GM 7 L	-7.5	-500	306	520	20	15	70
GM 10 S / DN 80	-7.5	-500	353	600	40	30	70
GM 10 S / DN 100	-7.5	-500	429	730	40	30	70
GM 15 L	-7.5	-500	635	1,080	40	30	73
GM 25 S	-7.5	-500	888	1,510	75	55	73
GM 30 L	-7.5	-500	1,247	2,120	100	75	75
GM 35 S	-7.5	-500	1,424	2,420	125	90	75
GM 50 L	-7.5	-500	2,030	3,450	125	90	78
GM 60 S	-7.5	-500	2,142	3,640	200	132	78
GM 80 L	-7.5	-500	3,031	5,150	250	160	80
GM 90 S	-7.5	-500	3,296	5,600	300	200	80
GM 100 S	-7.5	-500	3,884	6,600	350	250	80
GM 130 L	-7.5	-500	4,750	8,070	350	250	82
GM 150 S	-7.5	-500	5,709	9,700	500	355	82
GM 220 L	-7.5	-500	7,534	12,800	450	315	82
GM 240 S	-7.5	-500	8,829	15,000	700	500	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!

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.

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

LET'S TALK
Find your local contact
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

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AERZEN
EXPECT PERFORMANCE

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