

The Atlas Copco logo is positioned in the top right corner of the image. It consists of the brand name "Atlas Copco" in a white, serif font, centered within a blue rectangular box that has two white horizontal bars above and below the text.A technical drawing overlay is located in the bottom left corner, partially overlapping the main image. It features a circular cross-section of a blower with various dimensions and labels such as "12.301.001", "1.301.001", "C-C(1:3)", and "Ø72".

# ***Oil-free multistage centrifugal blowers***

ZM 4-6: compressed air and vacuum solutions up to 1.1 bar(g) / 16 psig  
and 9,200 m<sup>3</sup>/hr / 5,400 cfm





## ***Durability in tough environments***

With a flow range up to 9,200 m<sup>3</sup>/hr / 5,400 cfm our new multistage centrifugal blowers are suited for applications that require a high air flow and a 24/7 low pressure or vacuum air supply. The simple and durable design ensures you high process uptime even in harsh and high risk environments such as ATEX and API zones.

## **Simple design, high reliability**

Our ZM multistage centrifugal blowers are suited for harsh environments with temperatures above 50°C / 120°F. The stainless steel shaft and different motor options protect the unit from corrosive and dusty operating conditions and is suited for the vacuum removal of biogas, helping you decrease costly downtime of your production process. The new ZM are both ATEX and API 617 compliant, ensuring safe operation in high risk environments.

## **Saving energy by choosing the right solution**

With our new ZM, we have enlarged the flow range by 20%, offering you both fixed speed and variable speed options to match the air flow demand of your applications to make your production process even more efficient.

## **Flexible offering to fit your needs**

The scope of supply for our ZM multistage blowers is completely configurable to meet your needs. Whether you would like a simple blower package for an air application or need an advanced system for compressing combustible gases in a classified area, we got you covered. You can also choose to monitor and control the blower with your own system or have us supply an advanced control panel to monitor the health of the machine and adjust the blower to your desired setpoint.

# Markets & applications

Our oil-free multistage turbo blowers cover a wide and high flow range and are suited for both low pressure and vacuum applications up to 1.1 bar(g)/16 psig, making them ideal for a large number of industry applications.

## Wastewater treatment

The inlet valve of our fixed speed units and the variable speed enabled motor of our VSD controlled units allow you to match the air supply to the flow demand of your application in the most energy-efficient way, making the ZM fitted for applications that have a high and variable flow demand such as aeration in large wastewater treatment sites. Our reliable multistage blowers are also suited for the process of turning digester gas into energy as they are built to withstand the highly corrosive vapors associated with the process.



## Energy

When dealing with oxidation air applications in harsh environments such as landfill gas (LFG) and flue gas desulphurization (FGD) you need a durable solution that isn't easily affected by the oxidation gasses of your process. The stainless steel casing drains system is just one way to make sure our ZM will deliver you reliable performance even in tough conditions. The high turndown of our fixed speed package and the variable speed drive of our VSD packages ensure you even more energy gains can be made.



## Mining

Our multistage turbo blowers are designed to offer you a high air volume flow at a low pressure, making them suited creating flotation cells to separate the valuable minerals. The simple design and high reliability of our multistage blowers to ensure optimal performance in harsh mining environments.



## Oil & gas

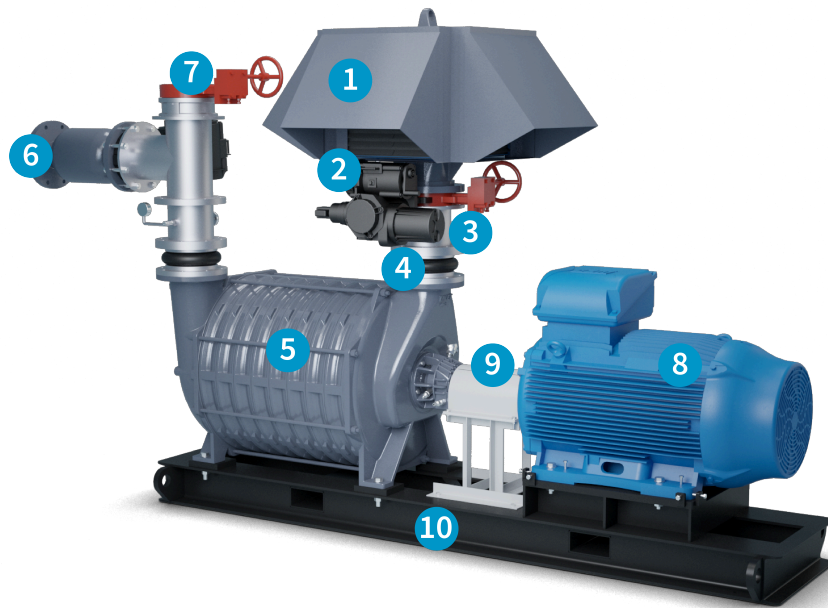
Keeping costs low is key when dealing with non profitable processes such as sulfur recovery. The simple design of our multistage blowers makes them reliable and easy to service, helping you to cut costs where necessary. Compliant with the API 617 standards and designed for operation 24 hours a day, 7 days a week in processes with a high condensate potential, our ZM ensures you continuous operation at a maximum load.

## Cement

Our ZM multistage centrifugal blowers are suited for thermal applications such as combustion air, and pressure and vacuum (negative) conveying, offering you the reliable performance even in dusty environments.



# ZM 4-6



## 1. Inlet filter/silencer

The inlet filter/silencer is a combined function component that removes 98% of particles greater than 10 microns in size out of the inlet air while also reducing the sound emissions from the inlet airflow. Custom filtration solutions are also available for finer particle filtration or special areas, such as those prone to sandstorms.

## 2. Flow regulation

The flow regulation of the blower can be achieved in two ways; with a throttling valve and actuator to adjust the butterfly valve position (as shown in the model) or with a variable speed drive (VSD) to adjust the motor speed. The VSD option can offer significant energy savings for those processes that have highly variable flows.

## 3. Instrumentation

As a standard we offer the blower packages with sensors/transmitters to work with our control panel options, but we can also supply simple gauges or no instruments at all.

## 4. Expansion joints

Expansion joints are supplied to allow for thermal expansion of connected pipework without causing excessive forces on the blower flanges, as well as the decouple any vibration from the piping. Stainless steel variants are also available for especially harsh applications.





## 5. Blower element

The heart of the package is the blower element itself. The strength of the multistage blower design is the ability to select both the number of compression stages and the impeller design of each stage to match the blower performance to your process requirements with maximum efficiency. The element has coatings to protect against corrosion, oversized bearings for extended running without maintenance, and double carbon ring seals to minimize leakages.

## 6. Blow-off assembly

The blow-off assembly consists of the piping tee, modulating electric actuator, and silencer. This optional assembly provides additional protection against surge during startup and operation. It can also be used to provide flows to a process below the surge limit of the blower.

## 7. Check valve & isolation valve

The check valve prevents the pressure of the downstream process from causing a backwards flow through machines that are not in operation, which can cause severe damage. In addition, an isolation valve can be used to completely isolate the blower from the process for maintenance.

## 8. Induction motor

Each blower package is provided with a premium efficient induction motor to drive the blower element. These motors can be suitable for fixed speed or variable speed operation and provided for a variety of voltages. In addition to the motor, we can also supply the starter (fixed speed operation) or variable speed drive (VSD) as well.

## 9. Coupling & coupling guard

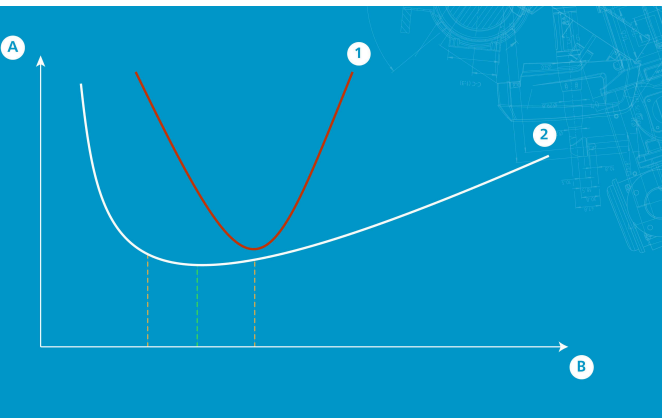
The motor is directly coupled to the blower element with either an elastomeric or flexible disc type coupling depending on the motor size. The rotating shafts are protected by a guard that meets OSHA requirements for machine safety.

## 10. Structural skid for easy installment

The blower assembly is mounted to a steel skid with the ability to be moved with forklift slots or lifting eyes.

# Energy savings

Design & control algorithms for optimal efficiency.



## Variable Speed Drive

Over 80% of a blower's lifecycle cost is taken up by the energy it consumes. Moreover, the generation of compressed air can account for more than 40% of a plant's total electricity bill. To cut your energy costs, Atlas Copco pioneered Variable Speed Drive (VSD) technology in the compressed air industry. VSD leads to major energy savings, while protecting the environment for future generations. Thanks to continual investments in this technology, Atlas Copco offers the widest range of integrated VSD blowers on the market.

### Legend

**A** = Losses

**B** = Speed

**1** = Total losses traditional element

## VSD savings

Atlas Copco's VSD technology closely follows the air demand by automatically adjusting the motor speed. This results in large energy savings of up to 35%. The Life Cycle Cost of a blower can be cut by an average of 22%. In addition, lowered system pressure with VSD minimizes energy use across your production dramatically.

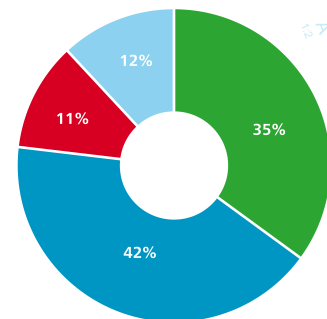
### Legend

**42%** = Energy

**35%** = Energy savings with VSD

**12%** = Investment

**11%** = Maintenance







## Components designed for maximum efficiency

- The strength of the multistage blower design is the ability to select both the number of compression stages and the impeller design of each stage to match the blower performance to your process requirements with maximum efficiency.
- Each blower package is provided with a premium efficient induction motor to drive the blower element. These motors can be suitable for fixed speed or variable speed operation and provided for a variety of voltages.

# Installation

Install your units outside, even in high ambient conditions.

Have any installation request that go beyond the standard scope of supply? We got you covered.

## Outdoor installation

### Helping you save space

Our blowers are suited for operation in high ambient conditions. Our units can be installed outside, close to your process and technology.







## Engineered solutions

### Tailored to your needs

Each project is unique and by entering into partnership with our customers, we can appreciate the challenge at hand, ask the relevant questions and design the best engineered solution for all your needs.

Engineered solution projects include but are not limited to:

- Hazardous area components:  
We can provide complete packages that meet IEC Zone 1 or Zone 2 requirements, as well as NEC Class 1, Div.1 or Div.2 requirements. This can be limited to just the blower motor or extended to sensors, actuators, control panels, etc.
- PLC control panels:  
In addition to our standard Atlas Copco Mk5 controller, we can offer custom PLC solutions from Allen Bradley, Siemens, and other brands. These control panels can be customized for complex processes to add redundancy, give additional monitoring or adjust the standard blower operation to meet specific process needs.
- Sound enclosures:  
For environments that require lower noise levels, we can provide sound enclosures to meet the required level. In addition, we can offer complete, integrated packages with the control panel and starter/VSD mounted in the enclosure on a common skid.
- Specific brands for components:  
When our customers have preferred vendors for motors, sensors, valves, or other accessories, we can substitute equivalent components instead of our standard offering.

# Monitoring & control

Get the best out of your installation!

## Elektronikon<sup>®</sup> MK5

### Intelligence is part of the package

The Elektronikon<sup>®</sup> unit controller is specially designed to maximize the performance of your blowers under a variety of conditions. The full color display gives you an easy-to-understand readout of the equipment's running conditions.

- Clear icons and intuitive navigation provides you fast access to all of the important settings and data.
- Monitoring of the equipment running conditions and maintenance status; bringing this information to your attention when needed.
- Operation of the equipment to deliver specifically and reliably to your compressed air needs.
- Built-in remote control- and notification functions provided as standard, including simple to use integrated webpage.
- Support for 31 different languages, including character based languages.



## SMARTLINK

### Remote monitoring and connectivity

Monitor your machines over the ethernet with the Elektronikon<sup>®</sup> unit controller and the SMARTLINK service. Monitoring features include warning indications, blower shut-down, sensor trending and maintenance scheduling.

Go for energy efficiency: customized reports will be generated on the energy efficiency of your blower room, in compliance with ISO 50001.

# Maximize your resources with a Service Plan

All equipment is covered by our manufacturer warranty. Properly caring for your air blower lowers operating costs and minimizes the risk for unplanned breakdowns or production stops. Operational efficiency is increased as our maintenance expertise makes life easier when it comes to resource management. Specialist services keeps your equipment running as it should, protecting your investment and guaranteeing high uptime and performance. A global aftermarket operation employing 360 field service engineers in 160 countries ensures reliable maintenance by Atlas Copco as part of a local service operation.

## Blower parts at your doorstep: our Parts Plan

Genuine Parts, designed and produced to the exact specifications of your blower, delivered right where and when you need them.

- All parts, one package - Always have the needed part for your service intervention at hand.
- Save money - A Service Kit costs less than the sum of its components if ordered separately.
- Less administration - Every Service Kit has a single part number, allowing you to create a simple purchase order that is easy to follow up.



## Fixed Price Services: best blower parts & maintenance

Avoid financial surprises. Our Fixed Price Services combine the expertise of factory-trained technicians with the quality of our genuine blower parts.

- The best blower parts - The unrivalled quality of our genuine parts results in optimal uptime, energy consumption and reliability.
- An expert maintenance plan - Rely on the expertise of factory-trained Atlas Copco technicians.
- Clear and easy - Tailored to your installation, site conditions, and production planning, every Fixed Price Service has a clear scope and price.

## Preventive Maintenance Plan for optimal blower uptime

Rely on trained Atlas Copco technicians and the unrivalled quality of our genuine parts.

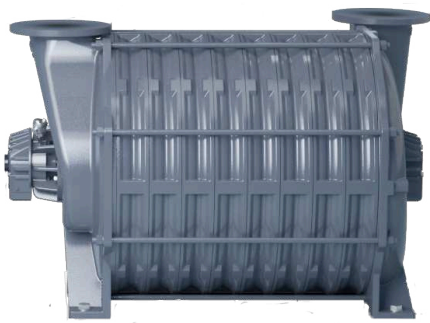
- Service reports - We help you achieve maximum energy efficiency by keeping you up to date of the status of your system.
- Prevent breakdown - If our technicians spot an additional developing problem, they will propose a solution.
- op-priority emergency call out system - If an urgent repair is needed, you get priority assistance.





# Scope of supply

From the complete solution to the bare blower element, we offer you different packages to fit your needs.



## Blower element

When you need a replacement blower for an existing package, whether it is an Atlas Copco ZM or multistage blower from a different brand, we can provide the bare element to couple to your existing motor and skid. We can also provide you with a bare blower element in case you want to package the blower as part of an OEM solution.

### Standard scope:

- Cast iron frame including the inlet, discharge and intermediates
- Cast or fabricated aluminum impellers
- Multiple impeller designs to fit the exact performance requirements
- Carbon steel shaft
- Labyrinth or carbon ring seals
- Bearings rated for 10-year L10 lifetime
- Grease or oil lubrication depending on size
- External coating

### Options:

- Performance test report
- External drain lines
- Wooden export crating
- Internal coatings and stainless-steel shaft
- Purged double carbon ring seals

## Blower, motor & skid

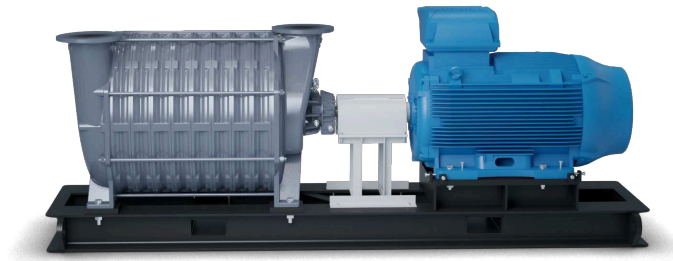
If you prefer to add your own accessories or want to incorporate our blowers into a complex process, the blower, motor and skid (BMS) package could be the right solution for you. The BMS is the most basic operable package that we can provide. These packages can also serve as replacements for existing ZM packages or for other installed equipment. In addition to the scope of supply available for bare blowers, we can offer:

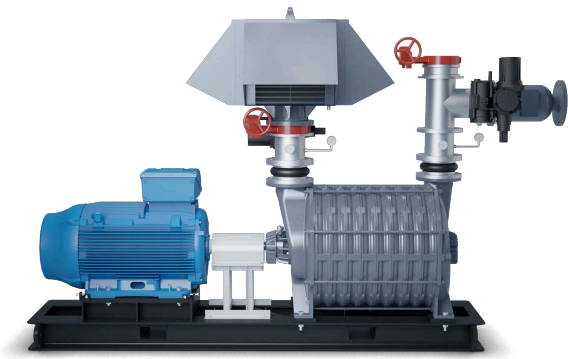
### Standard scope:

- IEC IE3 or NEMA premium efficiency, IP55 TEFC motors
- Elastomeric or disc coupling
- OSHA compliant coupling guard
- Structural steel skid

### Options:

- Motor winding RTD's
- Special motor requirements





## Blower package with accessories

On top of the blower, motor skid, we can also provide you a range of accessories for a fully operable process. This includes any of the mechanical components, sensors for monitoring, control panels and separate VSD/starter panels. You can choose only what you need for your installation, or we can propose you a complete solution.

Any of our standard accessories can also be adapted for special project requirements.

### Mechanical package components:

- Inlet filter-silencer
- Inlet throttle valve with actuator (for fixed speed applications)
- Inlet & discharge expansion joints
- Check valve
- Blow-off valve with actuator & silencer

### Sensors for monitoring:

- Bearing vibration & temperature (blower)
- Inlet temperature & pressure
- Discharge temperature & pressure
- Inlet filter differential pressure

### Electrical and controls:

- Mk5 control panel for blower control and monitoring
- Y-D starter panel for fixed speed applications
- VSD panel for variable speed applications

### Engineered solutions:

- Hazardous area components
- PLC based control panels
- Sound enclosures
- Specific brands for preferred vendor lists

# Technical specifications

Discover the technical specifications of our range.

## ZM 4-6 & ZM 4-6 VSD

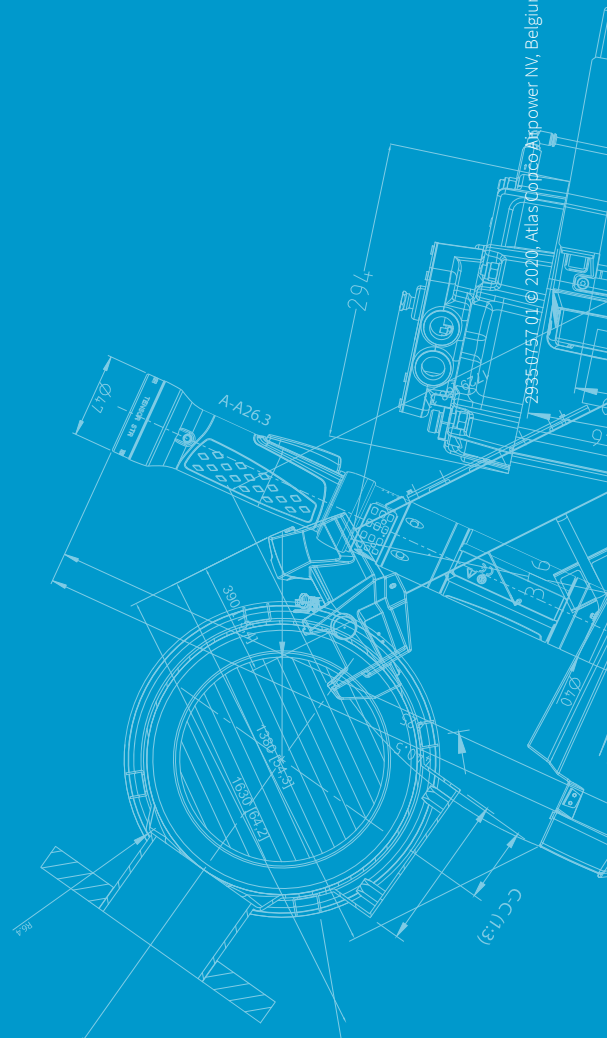
Type	Max. working pressure		Min. Capacity FAD		Max. Capacity FAD		Min. installed motor power		Max. installed motor power	
	bar(g)	psig	m <sup>3</sup> /hr	cfm	m <sup>3</sup> /hr	cfm	kW	hp	kW	hp
ZM 4 & ZM 4 VSD	0.7	10	1000	400	3200	1850	7.5	10	90	125
ZM 5 & ZM 5 VSD	0.9	13	2500	1500	7100	4150	18.5	25	200	250
ZM 6 & ZM 6 VSD	1.1	16	3000	1800	9200	5400	18.5	25	355	500







Atlas Copco AB  
(publ) SE-105 23 Stockholm, Sweden  
Phone: +46 8 743 80 00  
Reg. no: 556014-2720  
[www.atlascopco.com](http://www.atlascopco.com)



2935-9737-01 (9/2020), Atlas Copco Airpower NV, Belgium. All rights reserved. Designs and specifications are subject to change without notice or obligation. Read all safety instructions in the manual before usage.