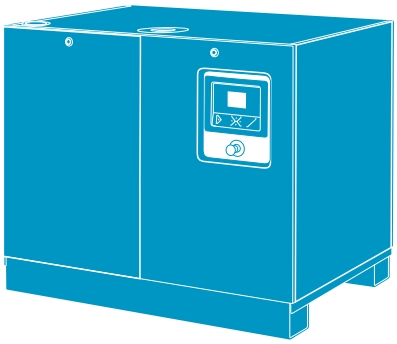
GHS VSD+ SERIES

Oil-sealed rotary screw vacuum pumps
With Variable Speed Drive (VSD) technology



Atlas Copco

INNOVATIVE, INTELLIGENT VACUUM PUMPS

The GHS VSD+ Series is a range of new-generation, intelligent, oil-sealed rotary screw vacuum pumps with Variable Speed Drive (VSD) technology from Atlas Copco. Based on the well-known and durable plug-and-play design principles of Atlas Copco compressors, these vacuum pumps have been designed by vacuum engineers to deliver peak performance at your operating pressure. These unique products offer:

- Superior performance against benchmarked oil-sealed and dry vane vacuum pump technologies.
- Increased efficiency – State-of-the-art screw technology, Variable Speed Drive (VSD) and innovative motor design combine to produce a leap forward in efficiency.
- Quiet operation – Noise levels are around half that of comparable technologies.
- Sustainable productivity thanks to built-in efficiency.
- Reduced environmental impact due to ultra-high oil retention at all operating pressures.

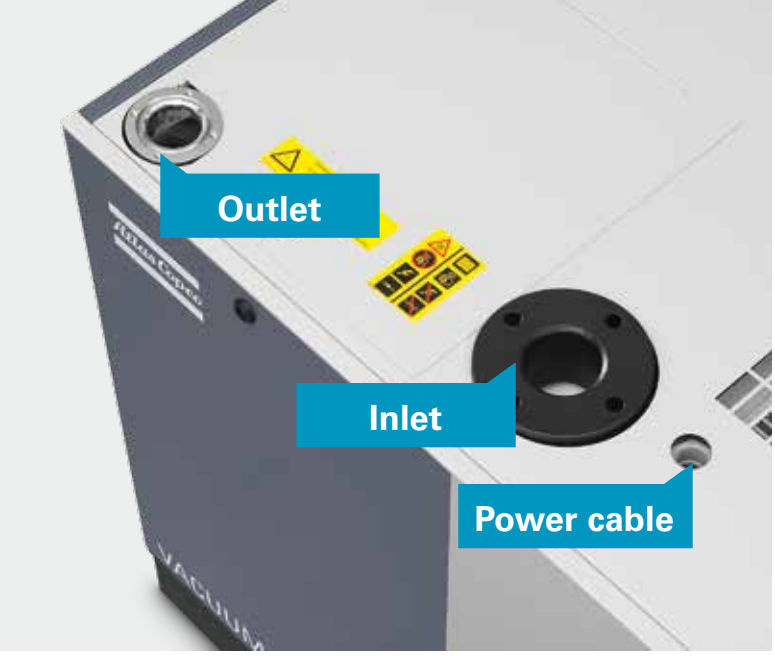
PERFECT FOR DIVERSE MARKETS

GHS VSD+ Series vacuum pumps are ideal for a range of applications in plastics, glass, bottling, canning, wood, packaging, printing and paper, meat packaging, house vacuum and central systems, and many more.

LOW LIFECYCLE COSTS

Here are two examples of the impressively low lifecycle costs of the GHS VSD+ Series:

- **For replacement pumps**, the GHS VSD+ Series offers a very low lifecycle cost (including service activities and energy). Generally the payback time against existing oil-lubricated or dry vane installations will be much less than two years, considering power and maintenance costs alone, without taking into account the ease of installation.
- **For new equipment**, lifecycle cost of the vacuum pump can be cut by around 50%.



OUTSTANDING, UNMATCHED BENEFITS

The GHS VSD+ Series offers a very low noise level among vacuum pumps available on the market today. Energy recovery leads to minimal hot air in the workplace – avoiding the usual problem of hot air in air-conditioned production environments. Its market-leading oil retention means that the quality of the exhausted air is optimal, which contributes to employee well-being (as this air is often breathed). It also avoids oil spills on the factory floor, which commonly occurs with conventional oil-lubricated pumps. The end result is a significantly cleaner working environment.

Easy, fast installation saves time

- Space-saving – The GHS VSD+ Series has one of the smallest footprints on the market: no larger than the footprint of a standard pallet.
- Everything you need is delivered in a single, neat enclosure.
- Plug-and-play installation.

High efficiency cuts costs

These vacuum pumps consume approximately 50% less energy than alternative technologies. They are among the most energy-efficient oil-lubricated vacuum pumps on the market in the capacity range where some other technologies (e.g. oil sealed vane) start to become inefficient mechanically and cost wise (typically >300 m3/hour) and expensive in terms of Capex.

Guaranteed uptime and low costs

The GHS VSD+ Series is designed for easy and infrequent maintenance: no vanes, no vane chatter, and no vane wear. Mean Time Before Maintenance (MTBM) rates are extremely long. No water is needed, and a SMART link is available to keep you effortlessly informed of pump performance and maintenance requirements.

Long-lasting components

The oil separator is designed for highly efficient oil coalescing with ultra low back pressure, which means less energy consumption. This contributes to a long oil separator life that is double that of a comparable oil-sealed vane vacuum pump. Another contribution to oil separator life is the patented design which never allows the filtration media to be overloaded, so they last much longer. This is great news for your maintenance budget.

Energy savings

VSD and set-point control – not normally features of vacuum pumps – lead to significant energy savings. Set-point control allows you to optimize the energy you use to maintain your process vacuum level and thereby optimize your process efficiency and performance. The minimum flow will be delivered to match your required vacuum level or speed – nothing is wasted!

Optimal flexibility

A unique water handling capability provides you with the versatility and flexibility you need.

THE INNOVATIVE TECHNOLOGY THAT MAKES IT WORK

1

Element

- Highly efficient oil-sealed rotary screw.
- Outstanding performance.
- Robust design.
- Element life is significantly longer than screw compressors and vane pumps.

2

Inlet control valve

Provides modulating vacuum control in conjunction with the VSD drive to minimize energy consumption.

3

Guaranteed oil retention

- Optimum design for maximum oil retention.
- Longer life because of managed performance means the vacuum pump never overloads the separators.
- Innovative and patented design retains oil at <3 mg/m³ even when under the greatest load. In conventional fixed speed vacuum pumps, overloaded oil separators lead to oil carryover.

4

Elektronikon® monitoring system

Elektronikon® is a state-of-the-art monitoring system for your vacuum pumps. It is simple and comprehensive, and leads to energy savings. It can also integrate your plant management system thanks to a remote monitoring option.

5

Canopy with hot-cool zones

The GHS VSD+ Series features a canopy with a hot-cool design. It isolates all heat producing and temperature critical components (motor, oil separator, element) from all other components. As cool running means higher reliability, this feature extends the lifetime of electronic components and leads to a longer Mean Time Before Maintenance (MTBM).

6

Easy to use, simple to maintain

- The top cover of the oil separator has a unique hinge mechanism. It slips the cover to the side, allowing the oil separator filter to be changed easily and quickly.
- A cleverly designed exhaust pipe enables the condensates to be collected in the discharge pipework at the outlet.
- Suitable for outdoor applications.

7

Energy recovery options

- Available for larger motor sizes.
- Helping you to fulfil your energy management & environmental commitments according to ISO 50001/14001.

ELEKTRONIKON® MONITORING SYSTEM

Elektronikon® is a state-of-the-art monitoring system for your vacuum pumps. It is simple and comprehensive, and leads to energy savings. It can also integrate your plant management system thanks to a remote monitoring option.

Easy to use

- 3.5-inch high-definition color display with clear pictograms, 32 language settings.
- Additional LED indicator for service.
- Graphical display of key parameters (day, week, month).

Comprehensive

You get all the information for the everyday management of your vacuum pump, as well as the alarms, safety shutdowns and maintenance:

- Monitoring: Vacuum pump operating status, recording of running/stopped hours, programmable timers, temperature/ pressure read-outs, set point control and other settings.
- Safety: Warning indications, fault and shutdown indications.
- Service: Service operations, remote control (optional).

Plant management system

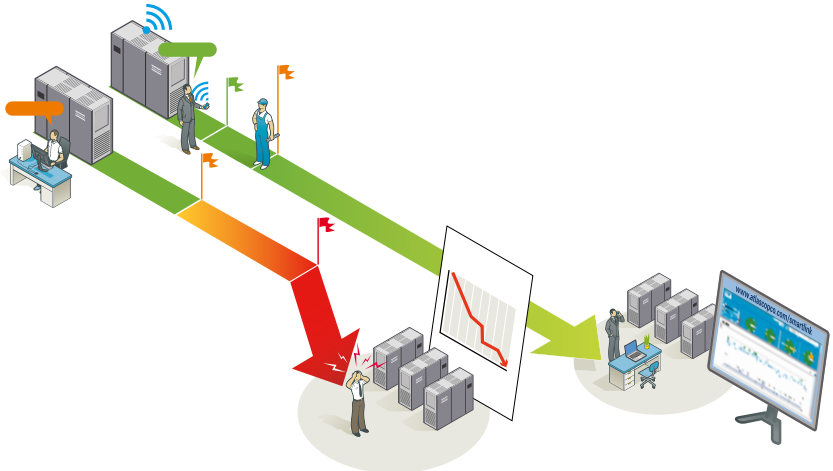
Elektronikon® installed on different vacuum pumps can be monitored in cascade. Remote monitoring can be added as an option (Modbus/Profibus/Ethernet protocols).

SmartLink: more than just a watchful eye

SmartLink is a flexible solution for data monitoring: easy to install and customize and user-friendly. Central vacuum systems and individual machines are connected to your engineering team by Atlas Copco. SmartLink brings system relevant data to your mobile phone, smartphone and PC. Whenever you have access to the Internet, it is possible to display the information you need; from machine alarms and faults to visualized representations of demand and load for your complete site vacuum installations. This allows you to respond quickly to changing circumstances. Service calls can be efficiently planned and production losses minimized. SmartLink is flexible and delivers as much or as little info as you choose.

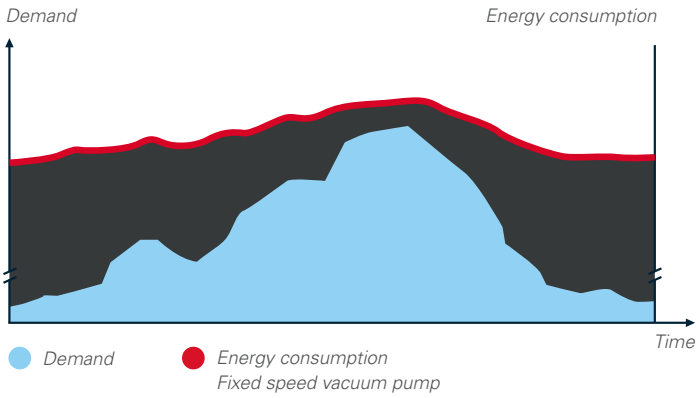
Features (Internet connection required)

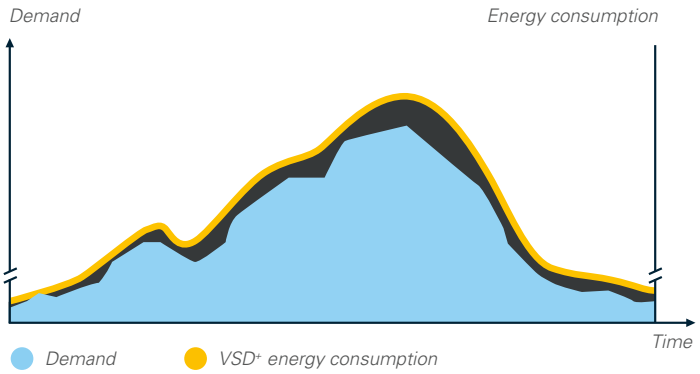
- Web portal: event overview of the last 30 days, access to service data and monthly status report by email
- Logging + download service data for the last 30 days (Excel, Word, PDF)
- Requirement of machine-related services (service, spare parts) directly via web portal
- SMS/email notification (service, failures and warnings)
- Online trend graph: status display



VSD+ FOR 50% AVERAGE ENERGY SAVINGS

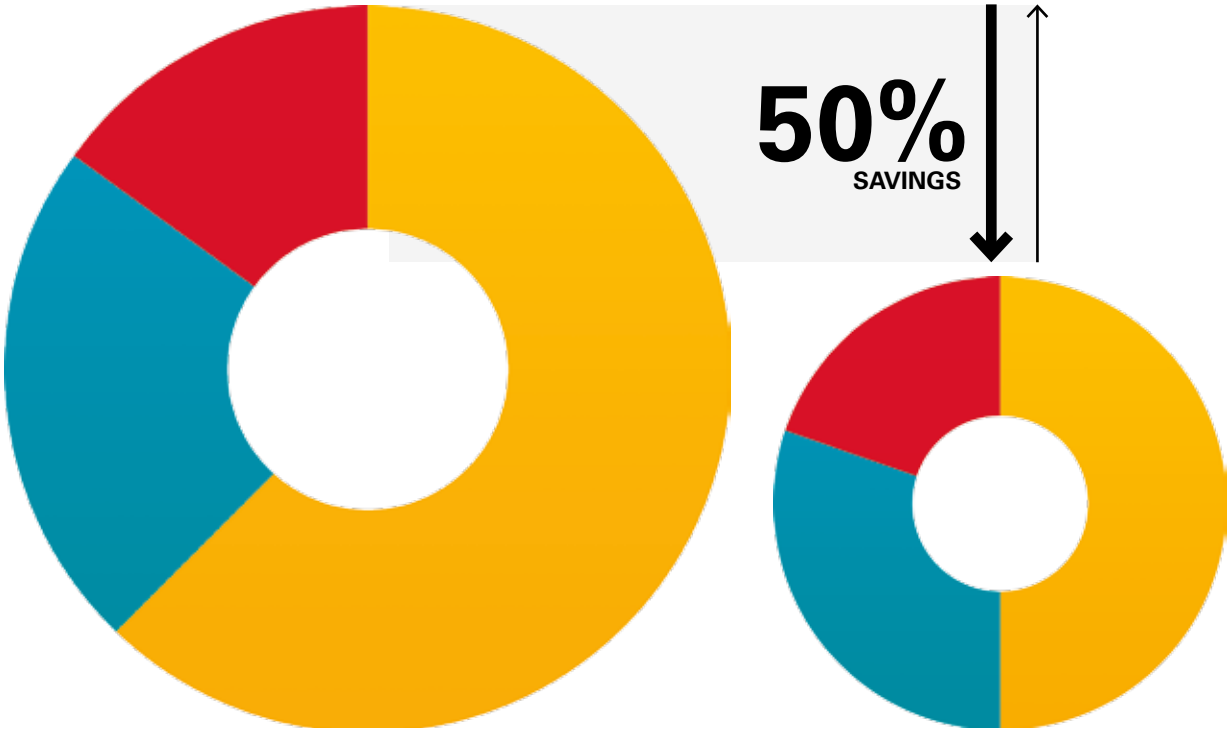
In almost every production environment, the need for vacuum fluctuates depending on different factors such as the time of day, week or even month. Extensive measurements and studies of demand profiles show that there are many substantial variants with regards to the demand.





Why Atlas Copco Variable Speed Drive+ technology?

- On average 50% energy savings with an extensive flow range (20-100%).
- Reduced electrical installation costs (fuse and cable size).
- Integrated Elektronikon® Graphic controller controls the motor speed and high efficiency frequency inverter.
- Eliminates peak current penalty during start-up of stop-start machines.
- EMC Compliance to directives (2004/108/EG).



** Based on measurement performed with the Vbox energy audit tool.*

HOT SPOT APPLICATIONS

The GHS VSD+ Series is suitable for a range of applications in various industries. Here are some of the key ones.

Holding, lifting and moving applications:

- Pick and place – especially electronics.
- Board testing.
- Pneumatic conveying.
- Printing and binding.
- Envelope manufacture.
- General packaging.
- Woodworking.

Forming and shaping applications:

- Plastics (e.g. bath tubs, shower trays, white goods internals).
- Packaging materials (e.g. thermoformed parts).
- Glass items such as bottles and windscreens.
- Wood/lamination.

Preserving applications:

- Meat packaging (flat, vacuum packs, controlled atmosphere packaging).
- Poultry packaging.
- Modified atmosphere packaging (gas flushing).
- Canning.
- Freeze drying.

When a clean environment is essential:

- Heat treatment, nitriding and metallurgy.
- Altitude simulation.
- Drying and general evacuation duties.
- Coating.
- And many more...

TECHNICAL SPECIFICATIONS

Machine type	Nominal Displacement		Ultimate Pressure	Oil quantity		Noise level range	Permissable ambient temperature range		Gross weight	inlet connection size	Outlet connection size	Shaft power	
	m^3/hr	cfm	mbar(a)	litres	gallons	dB(A)	°C	°F	kg/lbs			kW	hp
GHS 350 VSD+	390	230	0.35	16	4.2	51-65	0 to 46	32 to 115	550/1210	DN80 (PN6)	2 1/2" bsp	5.5	7.5
GHS 585 VSD+	560	330	0.35	16	4.2	51-68	0 to 46	32 to 115	550/1210	DN80 (PN6)	2 1/2" bsp	7.5	10
GHS 730 VSD+	730	430	0.35	16	4.2	51-73	0 to 46	32 to 115	560/1232	DN80 (PN6)	2 1/2" bsp	11	15
GHS 900 VSD+	870	510	0.35	16	4.2	51-76	0 to 46	32 to 115	570/1255	DN80 (PN6)	2 1/2" bsp	15	20

ISO21360-2:2012
Multiple pump controllers and other essential vacuum accessories are available as options or accessories.
Electrical/canopy specification: 380/460V 50/60Hz IP54 canopy CSA/UL.
220V/575V are available on request.
Available oils include Mineral, Synthetic and food grade.

NUMEROUS CONFIGURATIONS TO MATCH YOUR APPLICATION

Choose the version that matches your specific application requirements:

STANDARD

This machine focuses on delivering the exact performance you demand, at the minimum possible lifecycle cost. Ideal for applications where you need to maintain set vacuum level (a set point).

HUMID

Suitable for high water content duties, for applications such as plastics, clay molding, drying pipelines, salad cooling, freeze drying etc.

Configuration for high water vapour tolerance constitutes Humid version.

TURBO

This fast evacuation version enables faster cycle times – meaning more production. It's ideal for meat, cheese and chicken packaging, as well as cooling, freeze drying and general vessel evacuation applications.

Turbo version for fast cycling machines are available in 350-730 sizes and come with upgraded motors

H: 1100 mm, 43"
L: 1300 mm, 51"
W: 900 mm, 35"

COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers, towards the environment and the people around us. We make performance stand the test of time. This is what we call – Sustainable Productivity.

LLOYD'S REGISTER · LRQA
ISO 9001 • ISO 14001
OHSAS 18001

www.atlascopco.com/vacuum

Atlas Copco

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