

# ***GHS 3800-5400 VSD+ series***



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

***Atlas Copco***





# Atlas Copco



Atlas Copco



Elektronikon<sup>®</sup> Graphic

## ***Innovative, intelligent vacuum pumps***

The latest series of GHS VSD<sup>+</sup> has just got even bigger and better: it is the next generation of intelligent, oil-sealed rotary screw vacuum pumps with Variable Speed Drive (VSD) technology from Atlas Copco. We have kept to the same well-known and durable plug-and-play design principles of the smaller platforms in the GHS VSD<sup>+</sup> range. The design has been enhanced by dedicated vacuum engineers to deliver best in class performance in the industry.

These unique products offer:

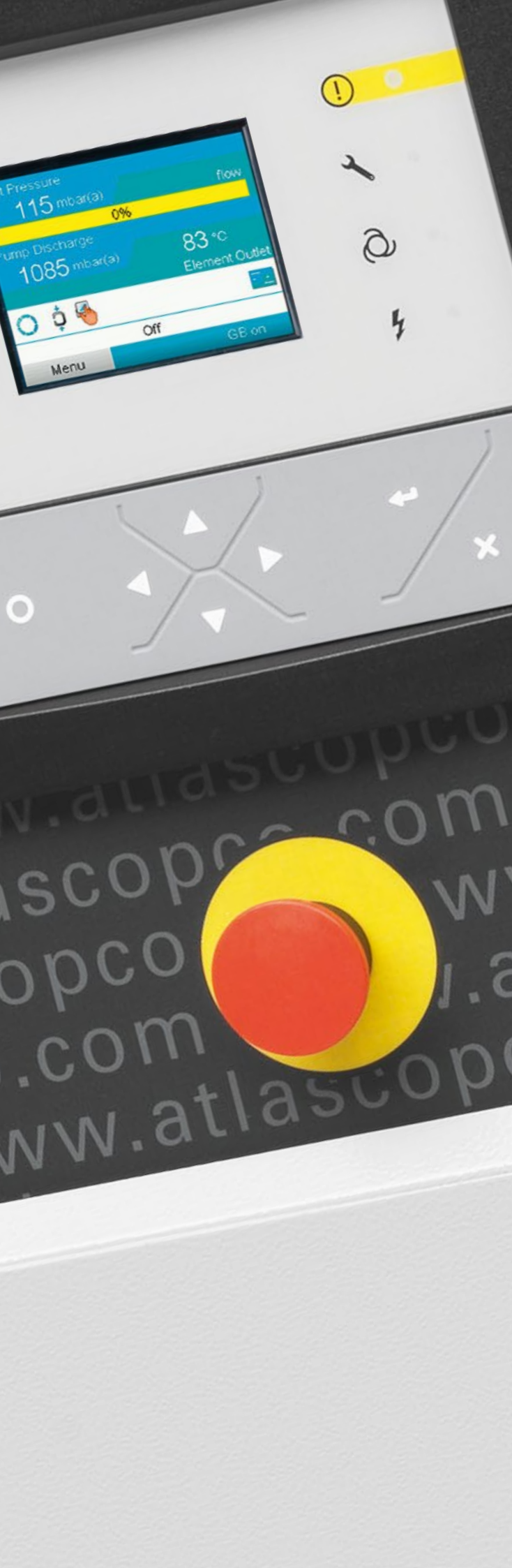
- Superior performance against benchmarked oil-sealed and dry vacuum pump technologies for the relevant applications.
- Increased efficiency – State-of-the-art screw technology, Variable Speed Drive (VSD) and innovative motor design combine to produce a leap forward in efficiency.
- Quiet operation – Noise level is far below 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**

The GHS VSD<sup>+</sup> Series vacuum pumps are ideal for a wide range of applications in canning, glass bottle and container production, packaging, pipeline drying, pick and place and many more. The GHS 3800-5400 VSD<sup>+</sup> is the perfect solution when you want to replace multiple point of use vacuum pumps with one centralised vacuum system which can be located in a utility room removing heat, noise and oil emissions from the working environment.

### **Low lifecycle costs**

- For replacement pumps, the GHS VSD<sup>+</sup> Series offers a very low lifecycle cost (including service activities and energy). Generally the payback time against existing oil-lubricated or multiple dry vane installations will be less than two years, only considering power and maintenance costs, without taking into account the easy installation.



## Outstanding, unmatched benefits

With these vacuum pumps you can potentially save 50%\* or more in energy costs. 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 and fixed speed OIS) start to become mechanically inefficient and expensive in terms of capital expenditure.

### Easy, fast installation saves time

- Space-saving – The GHS VSD+ Series has one of the smallest footprints on the market: ideal for compressor house installations.
- Everything you need is delivered in a single, neat enclosure.
- Plug-and-play installation.
- Multiple pumps can be controlled by the Elektronikon® (via ES6i).

### Optimized working surroundings

In addition, the GHS VSD+ Series offers a very low noise level when compared to other vacuum pumps on the market today. Its market-leading oil retention also means that the quality of the exhausted air is optimal and oil spills on the factory floor are avoided. The end result is a significantly cleaner working environment.

### Guaranteed uptime and low costs

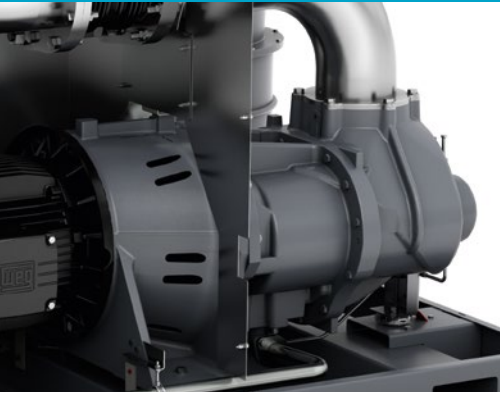
The GHS VSD+ Series is designed for easy and infrequent maintenance: no vanes, no vane chatter, and no vane wear. Mean Time Between Maintenance (MTBM) rates are extremely long. SMARTLINK is available to keep you effortlessly informed of pump performance and maintenance requirements.

### Energy recovery

As much as 90% of the electrical energy used by a vacuum solution is converted into heat. With Atlas Copco's integrated energy recovery system, it is feasible to recover up to 75% of that power input as hot water without any influence on the machine's performance. Through efficient usage of the recovered energy, you obtain important energy cost savings and a high return on investment.

\*In most applications compared to traditional fixed speed vacuum technologies based on measurement with our Vbox energy audit tool.

# The innovative technology that makes it work



1

## Element

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

2

## Atlas Copco's Neos inverter

- Atlas Copco's in-house designed inverter for VSD machines.
- A robust, aluminium enclosure for trouble-free operation in the harshest conditions.
- Fewer components: compact, simple and user-friendly.

3

## Elektronikon<sup>®</sup> monitoring system and SMARTLINK (optional)

- State-of-the-art monitoring system for your vacuum pumps.
- Full integration with your plant management system thanks to a remote monitoring option.



4

## Oil separator vessel

- The use of cyclone separation increases the total oil retention capacity of the machine without introducing excessive pressure drop resulting in a clean energy efficient vacuum pump.
- The design of the vessel also keeps focus on the serviceability of the separator elements, allowing filter change without disassembly of piping.



## 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 does not allow the filtration media to be overloaded, so they last much longer. This is great news for your maintenance budget.



5

### State-of-the-art oil cooling system

- An electronic thermostatic valve (QMV) accurately controls the element temperature.
- Accurate temperature control keeps the oil quality in optimal condition by reducing or eliminating water condensation in the oil.
- The cooling system is completed with a variable speed fan to optimize the energy efficiency.

6

### Optimal flexibility

A unique water handling capability provides you with the versatility and flexibility you need. All the machines are available as air-cooled and water-cooled version.

### Energy recovery option

- Allowing you to recover up to 75% of the power input.
- Helping you to fulfil your energy management & environmental commitments according to ISO 50001/14001.

### Energy savings

VSD and set-point control, which are normally no 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 lowest possible flow will be delivered to match your required vacuum level or speed – nothing is wasted!

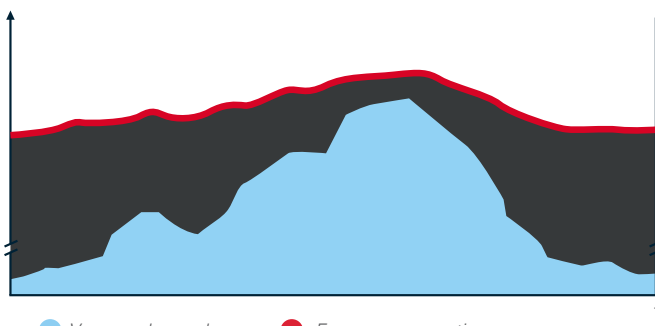
# VSD+ for potential energy savings of 50%\* or more

In almost every production environment, the need for vacuum fluctuates depending on different factors such as process changes, 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 vacuum demand.

## Why Atlas Copco variable speed drive technology?

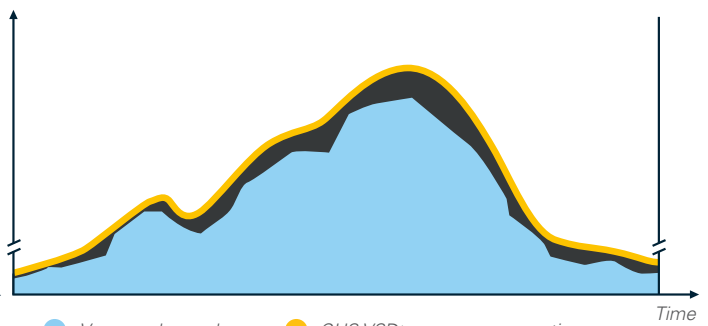
- Potential energy savings of 50%\* or more with an extensive flow range (10-100%).
- Reduced electrical installation costs (fuse and cable size).
- Integrated Elektronikon® Graphic controller controls the motor speed and high efficiency frequency inverter.
- Eliminates peak current penalty during start-up experienced with stop-start machines.
- EMC compliance to directives (2004/108/EG).

### Fixed Speed

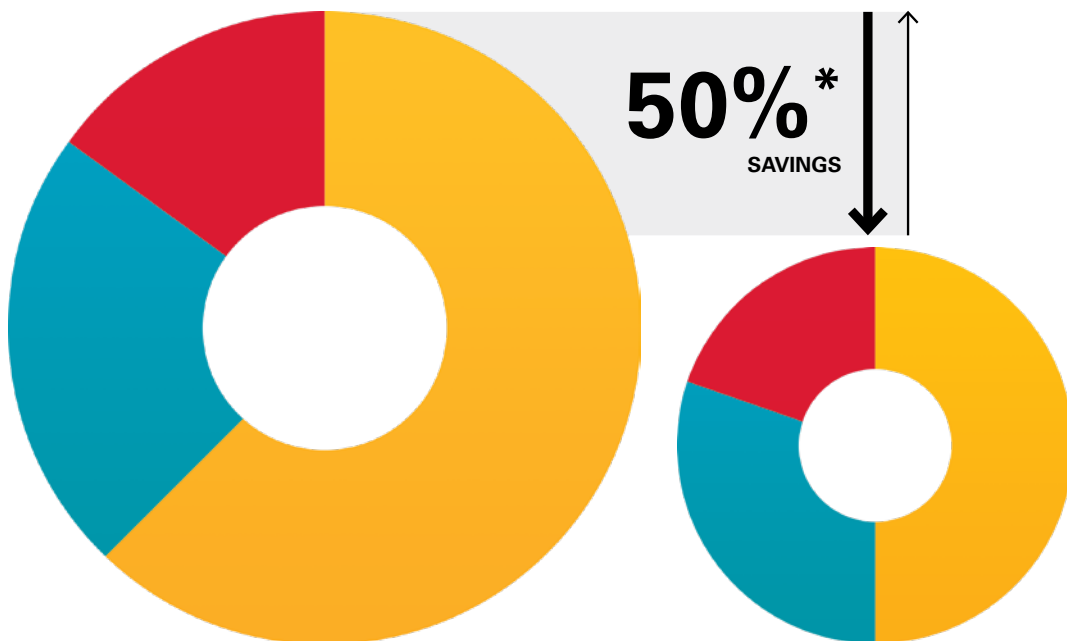


● Vacuum demand ● Energy consumption  
Fixed speed load/unload

### GHS VSD+



● Vacuum demand ● GHS VSD+ energy consumption



### Fixed Speed Vacuum Pump

● Energy

● Investment

● Maintenance

### GHS VSD+

\*In most applications compared to traditional fixed speed vacuum technologies based on measurement with our Vbox energy audit tool.



## Technical specifications

Type	Nominal displacement		Ultimate pressure		Oil quantity		Permissible ambient temperature range		Inlet connection size	Outlet connection size	Shaft power	
	m <sup>3</sup> /hr	cfm	mbar(a)	Torr	litres	gallons	°C	°F			kW	hp
GHS 3800 VSD <sup>+</sup>	3828	2253	1	0.75	85	21	0 to 46	32 to 115	DN200 (PN10)	DN150 (PN10)	55	75
GHS 4600 VSD <sup>+</sup>	4478	2636	1	0.75	85	21	0 to 46	32 to 115	DN200 (PN10)	DN150 (PN10)	75	100
GHS 5400 VSD <sup>+</sup>	5004	2945	1	0.75	85	21	0 to 46	32 to 115	DN200 (PN10)	DN150 (PN10)	90	120

ISO21360-2:2012

ES4i, ES6i, ES6v, ES16v, various inlet & outlet connections and other essential vacuum accessories are available as options or accessories.

Electrical specification: 380/460V 50/60Hz IP54 cubicle CSA/UL.

220 V/575 V: available upon request.

Available oils include mineral, synthetic and food grade.

All the machines are available as air-cooled and water-cooled version.



## ***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.



[www.atlascopco.com/vacuum](http://www.atlascopco.com/vacuum)

The Atlas Copco logo, consisting of the brand name 'Atlas Copco' in a stylized font, flanked by two horizontal bars above and below it.