

# Atlas Copco Variable Speed Drive

Compressor energy saving system



VSD  
THE SMOOTH MOVER



## Go with the flow

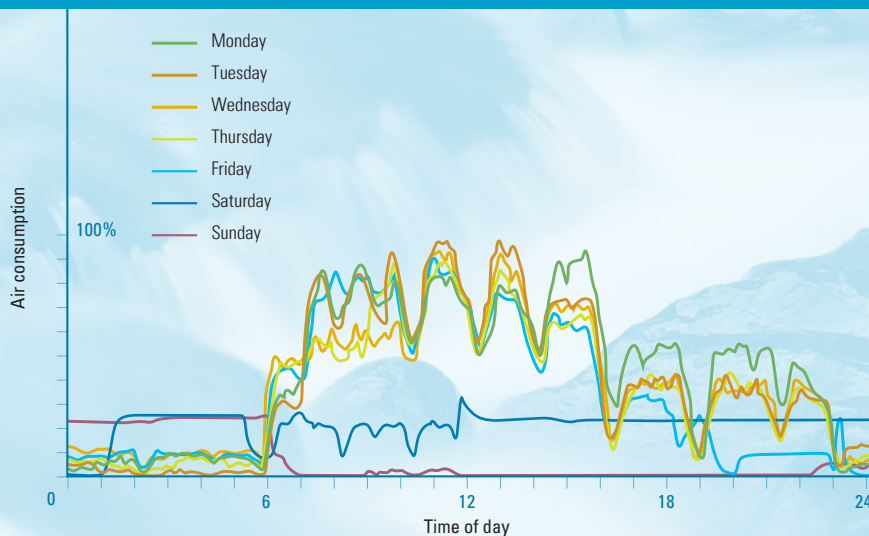
Modern industrial production is characterised by streamlined processes, often complex and diverse in nature. The varying use of pneumatic tools, irregular production batches, instrument air peaks, shift changes, weekend regimes... they all contribute to typical air demand profiles.

Yet, with all the fluctuations at every instant of the day, traditional compressor regulation systems cannot precisely follow the air demand variations. In fact, they could even add a few fluctuations of their own by constantly "chasing" the right pressure.

More importantly, at partial load, energy goes to waste. It shouldn't have to.

Introducing the Atlas Copco Variable Speed Driven compressors. The VSD provides the air consumer with exactly the right amount of air, no more, no less.

The Atlas Copco VSD range is simply the most cost effective, energy conscious and nature friendly compressed air system.

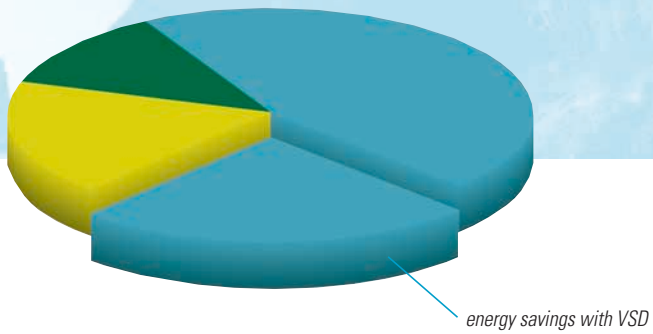


*A typical air demand profile, measured over one week*



## TOTAL COMPRESSOR LIFE CYCLE COST

- investment
- maintenance
- energy



## Balance your energy

**O**f the total Life Cycle Cost of a standard compressor, energy consumption represents over 70%, much more than your initial investment and the overall maintenance cost.

**B**y continuously matching the speed of the drive motor to your varying compressed air demand, the Atlas Copco VSD compressor minimises the energy consumption. The result: energy savings of up to 35% are possible, depending on the air demand fluctuations, and a short payback time of the VSD investment.

**T**he lower energy consumption not only benefits your bottom line, but has a positive effect on our environment as well. Less power means less pollution. VSD cares, because you care.

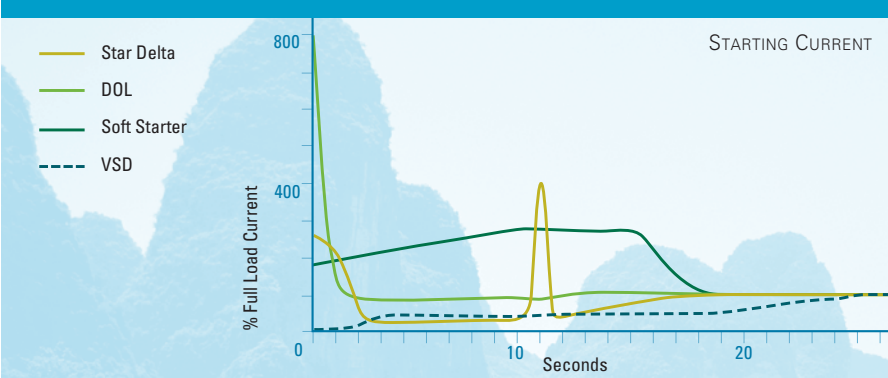


# Iron out the peaks

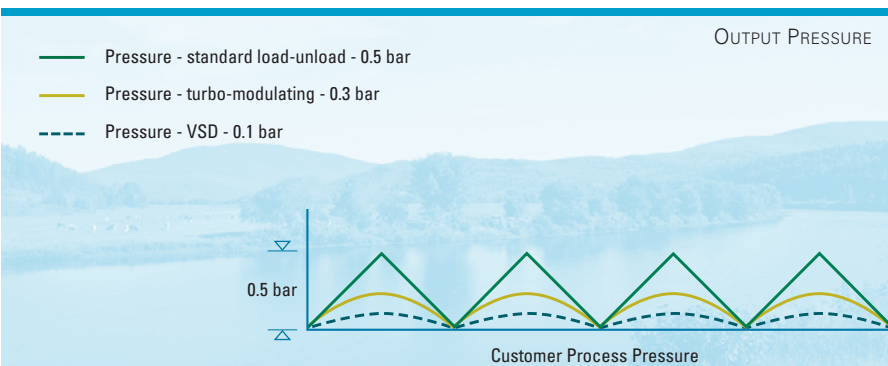
The VSD is a smooth operator in many respects. The output pressure is virtually constant over a wide capacity range, down to 35% of full load. This allows for a lower nominal pressure setting, which simply means more energy savings, up to 7% for a one bar reduction.

The total absence of pressure under or overshoots benefits the stability of downstream processes and the quality of the end product.

Compressor starts are even smoother than with so called "soft starters", yet with a much simpler and more economic electrical installation. Because of the total absence of current peaks, a high power factor throughout the regulation range and full compliance with EMC directives, the risk of penalties from the utility company is eliminated.



The low current VSD start is smoother than any star-delta, DOL or soft starter.



VSD ensures a virtually constant pressure, which saves more energy and improves process stability.

# Make a Very Smart Decision

From the day you install an Atlas Copco VSD compressor, your energy bill and the stability of your process will show a major difference. VSD is simply the perfect match between air supply and air demand. Economical and environment friendly.

VSD  
LOWEST COST COMPRESSED AIR

<ul style="list-style-type: none"> <li>air supply matches air demand by regulating compressor speed</li> </ul>	<ul style="list-style-type: none"> <li>energy savings at varying air demand</li> </ul>
<ul style="list-style-type: none"> <li>constant pressure within 0.1 bar</li> </ul>	<ul style="list-style-type: none"> <li>no pressure over or undershoots</li> <li>more energy saved (-1 bar <math>\approx</math> 7% savings)</li> <li>process stability</li> </ul>
<ul style="list-style-type: none"> <li>low starting currents</li> </ul>	<ul style="list-style-type: none"> <li>simplified electrical system</li> <li>no peak current penalties</li> </ul>
<ul style="list-style-type: none"> <li>smooth starting torque curve</li> <li>lower average rpm of parts</li> </ul>	<ul style="list-style-type: none"> <li>less stress on mechanical parts during start</li> <li>longer lifetime of rotating parts</li> </ul>
<ul style="list-style-type: none"> <li>stepless speed regulation within speed band</li> <li>load-no load regulation when demand falls below speed regulation (Z-VSD)</li> <li>motor stops after continued unloading; restarts when demand resumes</li> </ul>	<ul style="list-style-type: none"> <li>completely optimised control system for maximal energy savings</li> <li>use as stand alone or top-load machine</li> </ul>
<ul style="list-style-type: none"> <li>optimal combination of VSD and motor from one manufacturer</li> </ul>	<ul style="list-style-type: none"> <li>highest possible efficiency in the speed range</li> <li>consolidated warranty for the entire system</li> <li>world-wide service availability</li> </ul>
<ul style="list-style-type: none"> <li>compliance with EMC standards (electro-magnetic emissions)</li> </ul>	<ul style="list-style-type: none"> <li>world-wide applicability</li> <li>no penalties from utility companies</li> <li>no energy loss associated with emissions</li> </ul>
<ul style="list-style-type: none"> <li>energy recovery systems and optimised range of dryers</li> </ul>	<ul style="list-style-type: none"> <li>more energy savings</li> </ul>



The face of innovation

What sets Atlas Copco apart as a company is our conviction that we can only excel in what we do, if we provide the best possible know-how and technology to really help our customers produce, grow and succeed.

There is a unique way of achieving that - we simply call it the Atlas Copco way. It builds on **interaction**, on long-term relationships and involvement in the customers' process, needs and objectives. It means having the flexibility to adapt to the diverse demands of the people we cater for.

It's the **commitment** to our customers' business that drives our effort towards increasing their productivity through better solutions. It starts with fully supporting existing products and continuously doing things better, but it goes much further, creating advances in technology through **innovation**. Not for the sake of technology, but for the sake of our customer's bottom line and peace-of-mind.

That is how Atlas Copco will strive to remain the first choice, to succeed in attracting new business and to maintain our position as the industry leader.

