Filters: UD+

ATLAS COPCO QUALITY AIR SOLUTIONS

General Description

In almost all applications, contamination of the air supply can cause serious performance decline and increase maintenance costs in terms of actual repairs and lost productivity. This contamination is caused by intake air impurities, installation contaminants and by the lubrication of the compressor element.

Atlas Copco's innovative UD+ filters combine two filtration steps in one, which allows to reduce pressure drop by 40% while meeting the highest quality requirements.

- High-efficiency coalescing filters, combining DD+ and PD+ filters in one.
- Unique low-density glass fiber media providing 40% pressure drop reduction.
- Maximum oil carry-over: 0,0009 mg/m³. For optimum filtration, a UD+ filter should be preceded by a water separator.

Atlas Copco designs filtration solutions to provide compressed air purity that meets or exceeds levels set forth by the International Standard Organization (ISO).

- Filters are tested in accordance with these standards:
  - ISO 8753-2:2007: Test method for oil aerosol
  - ISO 12500-1:2007: Test method for oil aerosol filters

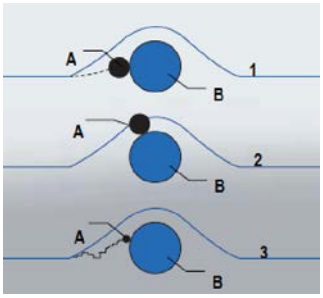
Tests have been conducted in-house and in external labs, and independently validated by TÜV.

- Regardless of your quality air and filtration needs, Atlas Copco undoubtedly offers a filter that is perfect for your application. With the Atlas Copco compressor and air treatment solutions all compressed air purity classes of ISO 8573-1:2010 can be reached.

Working Principle

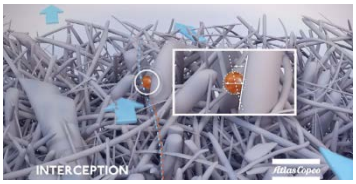
Contaminants (oil aerosol & dust) in the air stream are captured in a number of glass fiber layers. These consist of very thin fibers, distributed randomly and oriented in all directions. The contaminated air moves through these glass fibers, and the oil and dust particles are captured by the fibers.

Three different filtration mechanisms are at work: inertial impaction (1), interception (2) and diffusion (3). Each of those mechanisms is responsible for capturing particles of a particular size.

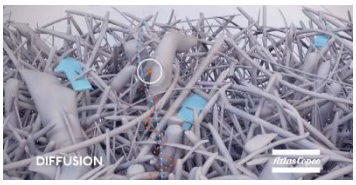


(1) Impaction occurs for relatively large particles. Due to the large inertia of a heavy particle, it does not follow the air streamline but instead travels straight ahead and collides with the glass fiber.

(2) Interception occurs when a particle follows the air streamline, but when the radius of the particle is larger than the distance between the streamline and the edge of the fiber.



(3) Particle deposition due to diffusion occurs when a very small particle does not follow the air streamline but moves randomly across the flow due to Brownian motion. It becomes increasingly important with smaller particle size.



Nautilus filter technology

Building on many years of experience and backed by extensive in-house testing, our Atlas Copco engineers gained completely new insights into oil coalescing filtration. We call it Nautilus filter technology, since it has the sophistication and the looks of a nautilus shell. The technology is based on **unique, low-density filter media**.

- The open structure of the filter media ensures a much easier passage of the air. This results in a **40% reduction of the pressure drop** and a filter that is much more energy efficient.
- The filter media package is much thicker than with traditional filters, guaranteeing **best-in-class filtration performance**.
- Since the filter media is wrapped – and not pleated – around the filter core, there is no risk of cracking the filter media and thus **no risk of poor air quality**.

In order to learn more about our Nautilus Filter Technology, please visit: https://youtu.be/07k1LGkfzA0.

Scope of Supply

Standard:

- Filter Cartridge
- Filter head & housing
- Differential pressure indicator or gauge
- Auto drain

Optional:

- Voltage-free contact mounted in differential pressure gauge
- EWD electronic drain
- Wall-mounting kit

Features & Benefits

Pure air

- High performance filter media
    - Thick package of enhanced glass fiber media.
    - Fully tested and qualified according to all applicable ISO standards.

Energy Savings

- Low pressure drop
    - Unique Nautilus filter technology uses filter media of a lower density, leading to 40% pressure drop reduction.
    - Optimized airflow path with low resistance.

Reliable operation

- Proven durable design
    - Filter media wrapped around the filter core, eliminating any risk of cracks.
    - High performance stainless steel filter cores.
    - Reliable automatic drain.
    - Strong filter housing with internal ribs to protect the element from damage and to route oil droplets.

Compact

- 2-in-1 concept
    - 50% reduction in installation cost and space.
    - Reduction in maintenance cost.
    - Less water disposal expenses.

Easy set-up and use

- Operational ease
    - Push-on element.
    - Wall mounting kit for easy installation (option).
    - Voltage-free contact mounted in the differential pressure gauge (option).