COALESCING FILTERS
UD+ Series (9-8,000 l/s / 19-16,952 cfm)
Nautilus filter technology
HOW CLEAN IS YOUR AIR?

Your production processes and end products depend on the air purity of the compressed air. Untreated compressed air may cause extensive damage and lead to serious performance degradation. To protect your investment, equipment and processes, Atlas Copco offers a comprehensive line-up of innovative filtration solutions to meet your specific needs.

The two-in-one filter

Unlike currently available technologies, Nautilus filter technology allows significant improvements in energy efficiency, without any compromise on filter performance or reliability. The first filters to make use of this innovative technology are Atlas Copco UD+ filters. These filters combine two filtration steps into one, hereby meeting the high-quality requirements of diverse applications and providing a range of significant benefits:

1. **40% pressure drop reduction**
   UD+ filters provide a significant pressure drop reduction combined with best-in-class filtration efficiency.

2. **Pure air**
   Air quality is equal to that obtained using two filters in line, thanks to the thick filter package of the UD+ filters.

3. **Save energy**
   A 40% lower pressure drop than the conventional DD+/PD+ combination results in 40% higher energy efficiency.

4. **Save space**
   The two-in-one filtration concept reduces installation space and complexity, making UD+ filters particularly suitable for applications where space is at a premium.

5. **Save money**
   Install UD+ filters to enjoy significant cost savings compared to conventional filters.

INNOVATIVE TECHNOLOGY, EXCEPTIONAL PRODUCTS

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. The result is our Nautilus filter technology based on unique, low-density filter media, with the sophistication and looks of a nautilus shell.

How does Nautilus filter technology work?

To explain Nautilus filter technology, we use the metaphor of a forest. The trees are the glass fibers in the filter media – strategically placed so that nothing can get past them. Now think of a balloon – representing the oil and solid particles you want to filter from the air – trying to pass through the forest. The air current will move the balloon and it will get stuck in the leaves of the trees.

- **Nautilus filter technology** uses filter media of a lower density than in classic coalescing filter technology. Even though the glass fibers in the filter media are not placed as closely to each other as with classic coalescing filters, the forest is significantly larger, resulting in extremely low oil carry-over. The outcome is BEST-IN-CLASS PERFORMANCE.

- **Classic filter technology** uses pleated technology to reduce the pressure drop. This increases the risk of cracking and therefore the risk of oil carry-over and poor air quality. Nautilus filter technology runs no risk of cracks in the filter media, because the filter media are wrapped around the filter. The result is PEACE OF MIND.
HIGH PERFORMANCE AND RELIABLE FILTRATION

1. High-performance stainless steel filter cores
   - Ensure ultimate strength and low risk of implosion.

2. Protection paper
   - Avoids direct contact between filter media and stainless steel filter cores.

3. Epoxy sealed caps
   - Reliable filtration.

4. Double O-rings (up to UD 550+)
   - Guarantee proper sealing to reduce leakage risks and increase energy savings.

5. Push-on element
   - Increased user friendliness and reliability.

6. Thick package of enhanced glass fiber media
   - Based on Nautilus filter technology.
   - Ensures high filter efficiency, low pressure drop, and guaranteed lifetime performance.

7. The double drainage layer (outer protection paper and foam)
   - Large drainage capacity which is ideal for variable speed compressors.
   - The polyurethane foam avoids oil re-entrainment.

ISO Certification

As leader in the field of oil-free air compression technology, Atlas Copco was the first manufacturer to be awarded ISO 8573-1:2010 Class 0 certification for its Z and AQ series of oil-free compressors. Also for filters Atlas Copco has always been at the forefront when it concerns certification. Our new UD+ filters comply with all applicable ISO standards for filtration, such as ISO 12500-1:2007 and ISO 8573-2:2007.

Whereas normally a DD+/PD+ combination would need to be used, the TÜV certificate clarifies that an air purity of 0.0009 mg/m³ can be reached with only one UD+ filter (as measured under the test conditions according to ISO12500-1:2007). As such, the UD+ filter guarantees best-in-class efficiency, validated by TÜV Rheinland.

With regards to pressure drop, the TÜV certificate clarifies that 245 mbar can be reached using a UD+ filter. The replacement of a DD+/PD+ combination by a UD+ filter then results in a pressure drop reduction of 40%, which means higher energy efficiency, as validated by TÜV Rheinland.

Guaranteed air purity & energy efficiency

<table>
<thead>
<tr>
<th></th>
<th>0.07 mg/m³</th>
<th>0.008 mg/m³</th>
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<tbody>
<tr>
<td>DD+</td>
<td>180 mbar</td>
<td>215 mbar</td>
<td>245 mbar</td>
</tr>
<tr>
<td>PD+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UD+</td>
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A FILTER SOLUTION FOR EVERY AIR PURITY

For every required air purity, Atlas Copco delivers a dedicated filtration and dryer solution. Some examples of typical installations are given below. Our sales engineer will advise you on choosing a customized solution for each requirement.

1. Compressor
2. UD+ filter
3. Refrigerant dryer
4. Desiccant dryer
5. DD+ filter
6. PD+ filter
7. QDT filter

Compressed air purity classification ISO 8573-1:2010

<table>
<thead>
<tr>
<th>PURITY CLASS</th>
<th>Solid particle</th>
<th>Water</th>
<th>Total oil*</th>
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<tbody>
<tr>
<td></td>
<td>Number of particles per m³</td>
<td>Pressure drop-point</td>
<td>Concentration</td>
</tr>
<tr>
<td>0</td>
<td>0.5 μm</td>
<td>1.0 μm**</td>
<td>1.5 μm</td>
</tr>
<tr>
<td>0</td>
<td>As specified by the equipment user or supplier and more stringent than Class 1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>≤ 20,000</td>
<td>≤ 600</td>
<td>≤ 10</td>
</tr>
<tr>
<td>2</td>
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<td>≤ 600</td>
<td>≤ 100</td>
</tr>
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<td>5</td>
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<td>-</td>
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<tr>
<td>6</td>
<td>≤ 0.5 mg/m³</td>
<td>≤ 100,000</td>
<td>≤ 100</td>
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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.