

# AIR-OIL SEPARATORS

## COMPRESSED AIR PRODUCTS

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During the last century compressed air became associated with many industrial applications and compressor manufacturers focused their attention on rotary screw and vane compressor whose compression systems use lubricating oil as a coolant.

Hence the necessity of using air/oil separators.

Filtrec designs and manufactures separators specifically for installation in rotary screw and rotary vane compressors and they are available in vertical, horizontal and spin on configurations. Their purpose is to separate the oil droplets from the compressed air, thereby producing cleaner air and allowing the oil to be scavenged and re-circulated in the compressor.

Filtrec separators are manufactured to satisfy OEM's needs in terms of:

- Physical principle of air/oil separation
- Element dimensions according to the compressor's performance and tank dimensions.
- Oil consumption to ensure a correct functional performance
- Use of high grade filtration and separation media to ensure the best quality of clean air needed for industrial applications.

Additionally it is very important to highlight that Filtrec separators can be used with all types of oils, whether standard, mineral based, synthetic or partially synthetic.

In order to decide which is the best separator to be used for a specific compressor, OEMs have to consider what level of separation needs to be achieved, in other words to target the minimum of parts per million of residual oil content required.

Then a technical solution is needed in order to reduce the oil concentration in the air.

Often OEMs need to consider a pre-separation system, which will reduce the PPM and increase the life of the air/oil separator.

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## CONSTRUCTION AND SEPARATION

Corrosive resistant materials are used in the construction of the air/ oil separators. Careful welding procedures and the use of the latest twin pack adhesive ensure that the element has high mechanical strength and can endure operating temperature up to 120°C.

Normally, the air and oil mixture passes from the outside to the inside of the separator and the coalescing effect is carried out through a multi stage separation process resulting in the recovery of the oil and producing clean air.

TYPE	PRESSURE DROP AT NOMINAL FLOW RATE (BAR)	GENERAL SPECIFICATIONS
Single Wrapped	0.16	low production costs, good performance and long life span
Double Wrapped Span	0.18	excellent performance on small dimensions or long life
Pleated	0.15	low pressure drop
Pleated + Wrapped	0.17	low pressure drop and excellent separation levels
With pre-separation fleece	0.2	for applications showing high oil percentage before separation or under particular environmental conditions
Spin On	0.25	for easy maintenance and small flow rates

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## PRESSURE DROP: EFFICIENCY & PERFORMANCE

At a nominal working pressure of 7 bar, the pressure drop on a new element varies between approximately 0.15 and 0.25 bar.

At other working pressures, the pressure drop is proportional to the air velocity across the separator (graph 2)

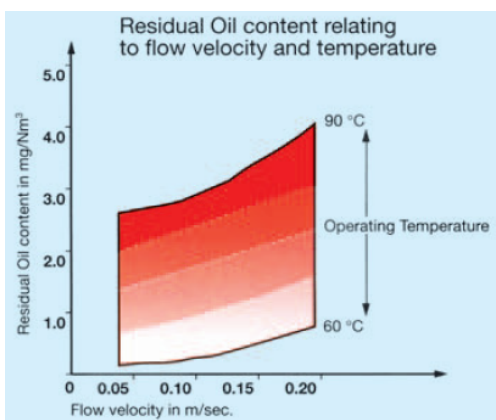
By using our separators, the oil carryover after separation is limited to about 1 to 3 ppm.

The life of the separator depends on many factors: the designs and regular maintenance of the compressor, clean environment, working temperature, quality of the air and oil filters.

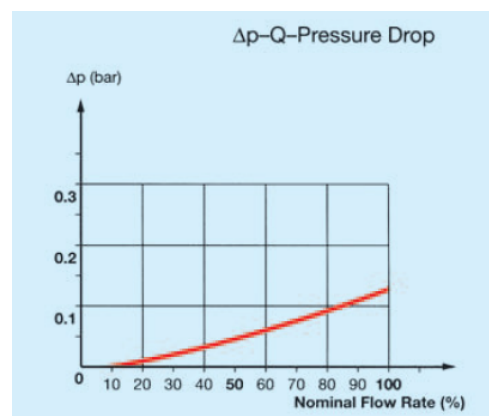
To ensure maximum separator efficiency, the joints must create a perfect seal.

Experience has shown that through correct installation and also using the correct type of oil, Filtrec separators can have a life expectancy of many thousands of hours.

GRAPH 1



GRAPH 2



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