Why should I change my filter element?

Filters are installed to provide contaminant removal to a specific air quality requirement, therefore the primary reason to change filter elements should always be to maintain air quality and they should therefore be replaced every 12 months.
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‘My filter is fitted with a differential pressure gauge and the needle is in the green - why should I change my element?’

Many filter housings are fitted with so called “Differential Pressure Gauges”. Generally, these are indicators and not precise gauges which offer no level of calibration or accuracy. Typically these will show an area of green and red, indicating that if the needle is in the green, the element does not require changing. Differential pressure gauges are neither filter service indicators nor air quality indicators; they simply measure differential pressure and offer an indication only of premature blockage.
Why should I change my filter element?

During operation, the depth filter media used in coalescing and dust removal filter elements is constantly bombarded by high velocity dirt particles whilst also being under extremes of pressure, temperature, and a pulsing air demand. Coalescing filters also have to contend with being attacked by acidic condensate, which can be anything from hot water to oil and chemical additives from compressor lubricants.

Element Life
0 - 12 Months

Differential Pressure
Gradually rises throughout 12 months.
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**Element Life**

*0 - 12 Months*

**Differential Pressure**

Gradually rises throughout 12 months.
A balance between risk and cost

Consideration must also be given to system pressure losses (and therefore operating costs) as the cost of a replacement element is often significantly lower than the energy cost associated with operating with higher differential pressures. Often the user’s emphasis is on the cost of maintenance and replacement parts when in reality these costs are insignificant to those associated with product spoilage should a filter element fail. What seems like a cost saving in the short term can turn out to be a costly mistake.
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What factors reduce filter performance?

If the filtration media becomes damaged, the required air quality can no longer be maintained or guaranteed.

Even a hole the size of a pin-point can result in the filter media rupturing. Additionally, large pressure differentials or "pressure spikes" can also rupture filter elements in an instant, allowing all the contamination to be carried past the filter and into the compressed air system.

Element Life
12+ Months

- Acidic Condensate
- Depth Filter Media: A pin point size hole will rupture an elements media.
- Differential Pressure: Drops back into 'green' after filter media damage.
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Element Life
12+ Months

Depth Filter Media
A pin point size hole will rupture an elements media.

Differential Pressure
Drops back into 'green' after filter media damage.
What factors reduce filter performance?

If this should happen, the needle on the gauge would always indicate in the green area and the element would never be serviced until the user eventually detected contamination downstream. By this time, it is too late and once introduced into the system, contamination is very difficult to remove and may often require specialist cleaning of piping and pneumatic equipment before the compressed air system can be operated again.

Element Life
12+ Months

Depth Filter Media
A pin point size hole will rupture an element's media.

Differential Pressure
Drops to zero when filter element ruptures.
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