



Donaldson®
Filtration Solutions



**The New Compressed Air Filter
Ultra-Filter**

A new age has begun. With the new Ultra-Fil

Unrivalled high performance!

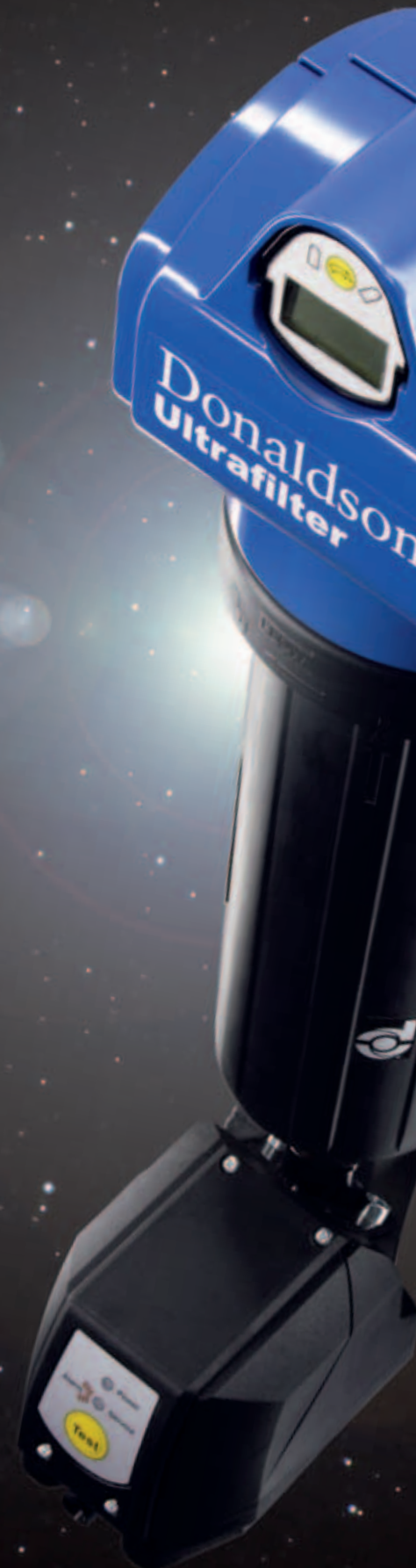
Flow-optimised filter design, paired
with innovative filtration technology
– an unrivalled overall concept!

Unrivalled efficiency!

Economic operation through differential
pressure and energy cost reduction!

Unrivalled compactness!

Space-saving and fits into the smallest spaces!



The new design: innovative to the core

Significant increase in performance due to new filtration technology

► Besides electricity, water and gas, compressed air is one of the most commonly utilised energy source. Hence, the following aspects have to be considered in high quality compressed air purification:

- Economic filtration
- Validated performance data according to ISO 12500-1
- Reliable achievement of compressed air quality suitable to the application according to ISO 8573-1

Air quality class	Dirt (solid particles)			Water	Oil
	Maximum particle number per m ³ Particle size, d in µm			Pressure dewpoint	Concentration
	0,10 < d ≤ 0,5	0,5 < d ≤ 1,0	1,0 < d ≤ 5,0	°C	mg/m ³
0	Specified according to application and better than Class 1				
1	100	1	0	≤ -70	≤ 0,01
2	100.000	1.000	10	≤ -40	≤ 0,1
3	*	10.000	500	≤ -20	≤ 1
4	*	*	1.000	≤ +3	≤ 5
5	*	*	20.000	≤ +7	> 5

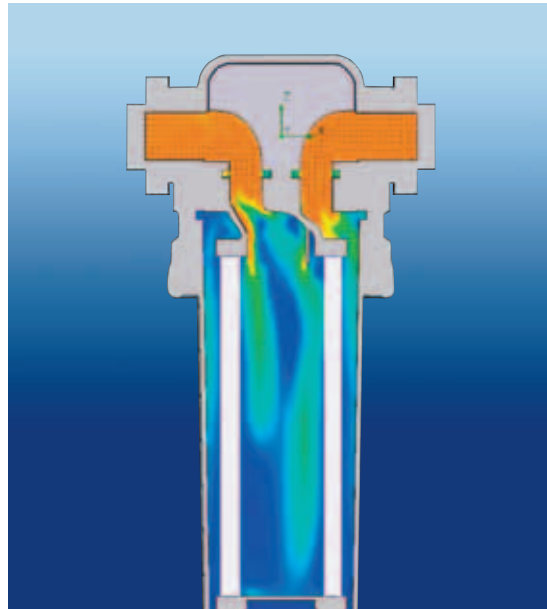
* not specified

Unrivalled high performance

► The new Ultra-Filter was developed on the basis of world-wide experiences and innovative designs for highly efficient and economic filtration technology.

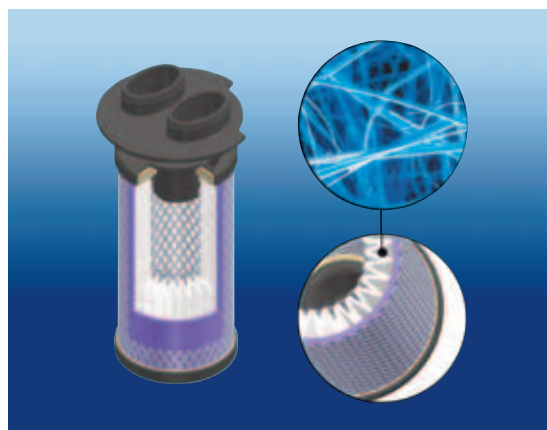
- A flow-optimised filter design guarantees minimum pressure loss
- The innovative filtration technology ensures high separation efficiency
- An intelligent overall concept for unrivalled efficiency

Computer-aided simulation was the basis for the turbulence-free design with optimised air flow through the filter housing and into the element. This ensures low pressure losses.



Flow-optimised air flow

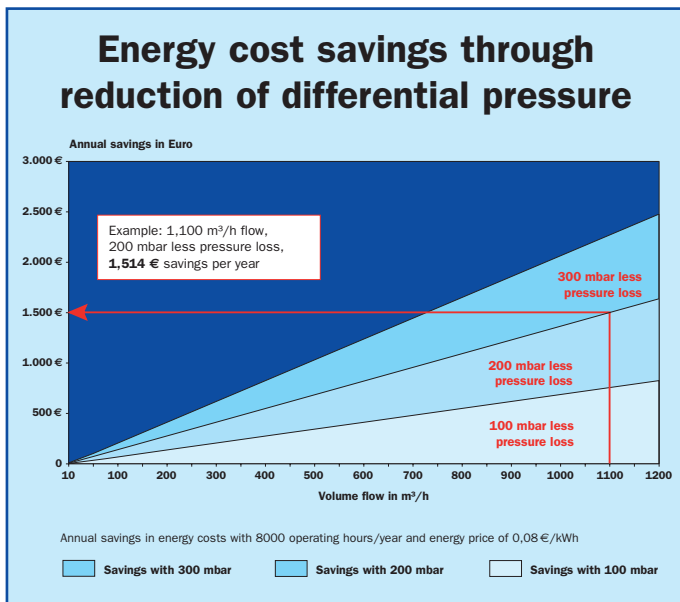
The core of each filtration system is the filter element. The new filter medium, advanced production technology and optimised pleating resulted in a reduction of pressure loss by 50 % with increased separation efficiency at the same time. The filter surface area was enlarged by a multiple, ensuring a higher dirt retention capacity.



More economic filtration through greater filter surface area and higher dirt retention capacity

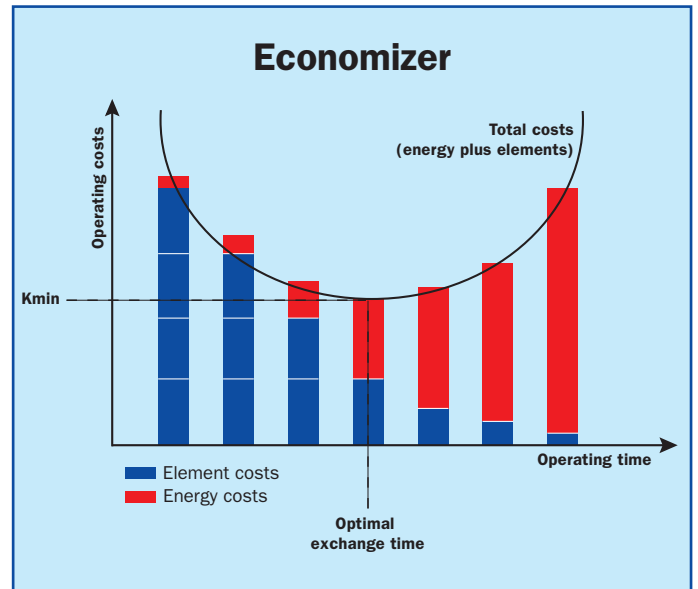
Unrivalled efficiency

▶ The economic efficiency is clearly indicated by the reduction in differential pressure. Just a 200 mbar lower differential pressure over 8000 operating hours saves 1500 Euro per year. (7 bar operating pressure, 120 kW installed power, 8 Euro Cent/kWh). This practical example shows that the investment in optimising the compressed air system rapidly pays for itself.



Further energy cost savings are achieved by the timely replacement of used filter elements. The most economic time for this action is determined by the Economizer. This continuously measures the differential pressure. The integrated micro-processor evaluates the

measurement data and compares the higher energy costs caused by pressure loss with the costs of a new filter element. The most cost-effective replacement time for the filter element is calculated and LED's then signal that "Filter exchange" is necessary.



Economic efficiency also means: The right filter element for each application. Every required compressed air quality can be achieved with the least possible pressure loss. The new Ultra-Filter offers, with its 6 different grades, all levels from prefilter via sub micro filter to active carbon filter and therefore everything that an efficient compressed air purification needs.

Unrivalled compactness

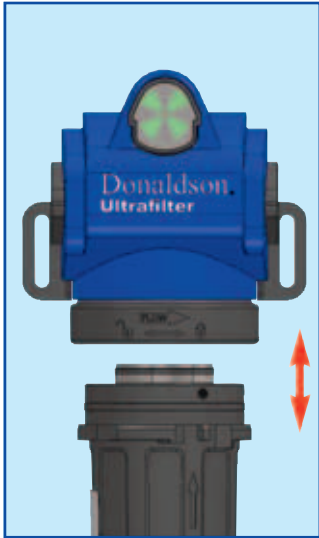
▶ The new Ultra-Filter is space-saving in every respect:

- ▶ The space requirement: up to 30% less
- ▶ The installation height: a few centimetres of ground clearance enables filter exchange
- ▶ The differential pressure display: integrated in filter head
- ▶ The filter combination: fits into the smallest spaces due to an intelligent adapter solution
- ▶ The wall mounting: adjustable.

The new flexibility: totally convincing!

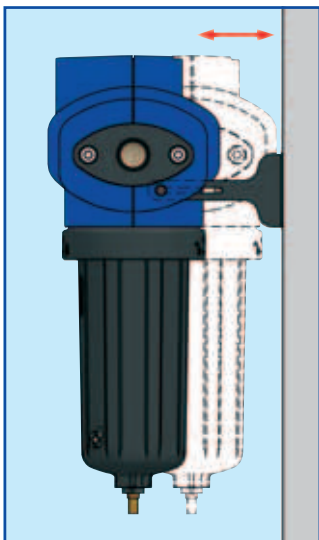
Unrivalled ease of use

- ▶ The new Ultra-Filter is unrivalled in its ease of use. This is evident both during installation and when the filter element is replaced. The filter bowl is rotated slightly via a bayonet lock and can be removed together with the filter element. The new element is just as easily inserted. The integrated condensate drain does not have to be disconnected from power and condensate feeds. The cover with integrated differential pressure display can be rotated – so that the display stays visible from the selected side.



Unrivalled flexibility

- ▶ All filters can be either used as coalescence filters (flow through element from the inside to the outside) or as particulate filters (outside to inside). The essential clue: if requirements change, the filter head does not even have to be rotated. Changing the coding clip inside the filter bowl allows the filter element to be rotated and so change the flow direction. The coalescence filter becomes a particulate filter in seconds – and vice versa. Wall supports available on request enable flexible wall mounting. The telescopic design of the support provides stageless adjustability. The combination of filter grades installed in series is provided through connection adapters. Simple to mount and space-saving to even fit into the smallest spaces.



- ▶ With the combination of Economizer and the electronic condensate drain UFM-T, Donaldson offers an integrated, flexible system solution.



- Operating signals can be remotely-monitored and – this is new – the differential pressure signal can be transmitted via a standard analog interface (4-20 mA).

Unrivalled safety

- ▶ Operating safety is paramount:
 - ▶ High operating safety through a bayonet lock: The filter cannot be opened while it is under pressure.
 - ▶ No inflation of coalescence drainage layer: It is completely fixed in place by the outer support sleeve. This ensures a constant flow cross-section between element and housing at all times.
 - ▶ High quality corrosion protection: All filter housings are immersion-lacquered on the in and outside. This ensures long-term protection, particularly against aggressive condensates.

Excellence with the rating “Unrivalled”

► With 9 sizes, the new Ultra-Filter covers the performance range from 35 to 1100 m³/h flow rate and therefore conventional compressor capacities between 2 and 120 kW.


- **Standard** – Economizer with float drain
- **Plus** – Economizer with float drain
- **Superplus** – Economizer with level-controlled condensate drain UFM-T



With the correct selection of the filtration level and flow rate, the right product for the filtration task is always available to the user.

P-filter Particle filter	Initial differential pressure: 0,15 bar ¹ Efficiency: 100 % related to 25 µm
B-filter Particle filter	Initial differential pressure: 0,12 bar ¹ Efficiency: 100 % related to 25 µm
A-filter Activated carbon filter	Initial differential pressure: 0,15 bar ¹ Residual oil content: 0,003 mg/m ³ ³
V-filter Coalescence filter	Initial differential pressure: 0,11 bar ¹ Residual oil content: < 0,2 mg/m ³ ²
M-filter Coalescence filter	Initial differential pressure: 0,11 bar ¹ Residual oil content: < 0,02 mg/m ³ ²
S-filter Coalescence filter	Initial differential pressure: 0,13 bar ¹ Residual oil content: < 0,01 mg/m ³ ²

¹ related to nominal performance at 7 bar, dry condition
² related to an inlet concentration of 3 mg/m³
³ when upstream connected a M- or S-filter

Technical data	Filter type	Capacity*	Connection	Filter element
		Nominal m ³ /h	G	Size
 Version “Superplus” shown here	P Filter			
	B Filter			
	A Filter			
	V Filter			
	M Filter			
	S Filter			
	0035	35	G 1/4"	0035
	0070	70	G 3/8"	0070
	0120	120	G 1/2"	0120
0210	210	G 3/4"	0210	
0320	320	G 1"	0320	
0450	450	G 1 1/4"	0450	
0600	600	G 1 1/2"	0600	
0750	750	G 2"	0750	
1100	1100	G 2"	1100	

* related to the intake compressor +20°C, 1 bar abs., at 7 bar g operating pressure

Technical alterations reserved (8/2007)



Filter from Donaldson.

Unrivalled ease of use!

Installation and filter element
replacement made easy!

Unrivalled flexibility!

Rotatable, combinable, adjustable – admirable!

Unrivalled safety!

No limits to the operating and
application security!

Donaldson. *And everything just got better.*

Total Filtration Management

► Donaldson offers a wide variety of solutions to reduce your energy costs, improve your productivity, guarantee production quality and help preserve the environment.

Compressed Air Filtration, Sterile Filtration, Process Filtration, Refrigerant Drying, Adsorption Drying, Condensate Drains, Condensate Purification Systems, Water Chillers, Air/Oil Separation, Dust and Fume Removal, Process Air and Gas Processing, Oil Mist Separation, Industrial Hydraulics

Total Filtration Service

► A comprehensive range of services especially designed to keep your production at peak performance and at the lowest total cost of ownership.

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