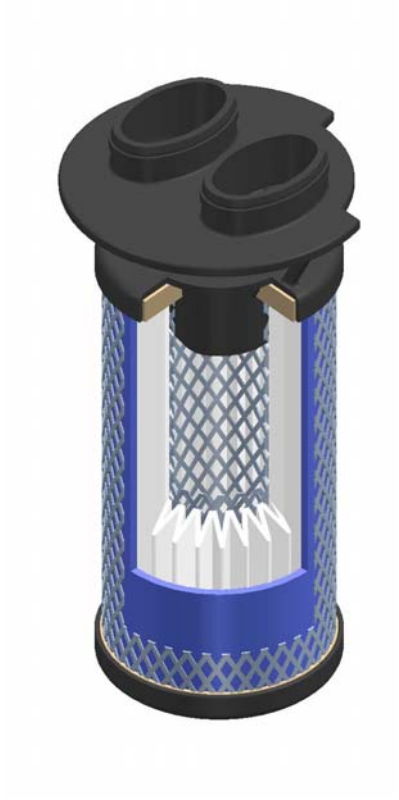
Depth Filter M, S

The depth filter for the removal of water, oil aerosols and solid particles from compressed air and gases with validated retention rate acc. to ISO 12500-1.



Product description:

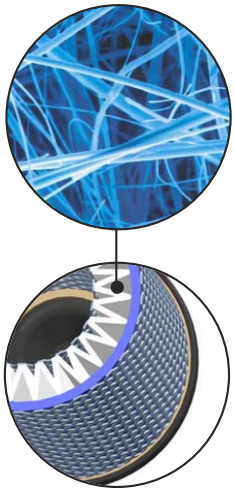
The filter elements type M, S are designed for the purification of compressed air or gases in industrial applications.

Validated performance data acc. to ISO 12500-1 for reliable achievement of compressed air quality suitable to achieve ISO 8573-1 quality classes.

Due to a flow-optimised design of the filter element as well as by the assigned filter media and the advanced production technology, the differential pressure is minimized and a continuously high separation effiency is ensured.

The filter elements type M and S are based on the three-dimensional micro fibre fleece made of coated borosilicate glass fibers, which works oil and water-rejecting.

By utilising various filtration mechanisms such as retention by direct impact, sieve-effect and diffusion effect, liquid aerosols and solid particles down to the size of 0.01µm are being retained in the filter.



Cross section of the depth filter with SEM micrograph of the filter media

Cross section of the depth filter

Applications:

The depth filter is for example being utilised in the following industries:

- Final filtration for control and process air
- Pre-filter to protect adsorption dryers (M)
- Dust filter downstream adsorption dryers (M)
- General applications in food and beverage industries
- Filtration (S) upstream of activated carbon filters

Element Type	Flowrate at 7 bar g m^3/h *
0035	35
0070	70
0120	120
0210	210
0320	320
0450	450
0600	600
0750	750
1100	1100

Sizing example for pressure which deviates from nominal pressure:

$\dot{V}_{nom}$ = 350 m^3/h, operating pressure = 9 bar (g)

$$\dot{V}_{corr} = \frac{\dot{V}_{nom}}{f_p}$$

$$\dot{V}_{corr} = \frac{350\ m^3/h}{1.25} = 280\ m^3/h$$

Calculated Size: Type 0320

Operating Pressure bar ü	Conversion factor f_p
1	0.25
2	0.38
3	0.50
4	0.63
5	0.75
6	0.88
7	**1.00**
8	1.13
9	1.25
10	1.38
11	1.50
12	1.63
13	1.75
14	1.88
15	2.00
16	2.13

* m^3/h related to 1 bar abs. and 20°C

Donaldson Filtration Deutschland GmbH · Industrial Filtration Solutions · Büssingstraße 1 · D-42781 Haan · Telefon +49/2129/569-0 · Telefax +49/2129/569-100

Depth Filter Type M, S

Features:	Benefits:
Validated performance data acc. to ISO 12500-1	Reliable reaching of the compressed air quality according to ISO 8573-1
Intelligent overall concept	Flow range, filtration grades, efficienies and available options perfectly meet requirements of air purification
Flow-optimised Design	Minimum pressure losses, thereby savings of energy costs
Pleated filter media	High dirt retention capacity by enlarged filter surface with smallest pressure loss
Coalescence sleeve fixed by outside support sleeve	Flow area between element and housing guaranteed at any time; optimised drainage function by constant stabile structure of the coalescence sleeve
Support sleeve made of stainless steel meshed grid	Protection of the filter media against pressure shocks
Use of stainless steel material with glass fiber reinforced polyamide	Optimal corrosion protection

Materials:	
Filter media	Borosilicate glass fibre fleece
Coalescense sleeve	Polyester fleece
Inner and outer support sleeves	Stainless steel 1.4301 / 304
End caps	Glass fibre reinforced polymer
O-Rings	Viton: silicone free and free of compound (Standard)
Bonding	Polyurethane

Validation:
Validation of high-effiency filters acc. to ISO 12500-1

Particle retention rate related to 0.01 µm	Oil retention rate acc. to ISO 12500-1	Residual oil content at an inlet concentration of		
			10 mg/Nm³	3 mg/Nm³
η (M) = 99.99998%	η (M) = 99.7%	$\dot{m}_{Oil}$ (M) [mg/Nm³]	0.03	< 0.02
η (S) = 99.99999%	η (S) = 99.8%	$\dot{m}_{Oil}$ (S) [mg/Nm³]	0.02	< 0.01