



Donaldson
FILTRATION SOLUTIONS

Compressed Air Filtration

DFX

Adsorption Filter for special applications

AX

MAIN FEATURES & BENEFITS:

- Activated carbon filter with integrated particle filter for the retention of oil vapours, hydrocarbons and odours as well as particles from compressed air and non-corrosive gases of fluid group 2 (non-dangerous gases) and selected non-corrosive gases of fluid group 1 (dangerous gases) acc. to Pressure Equipment Directive 2014/68/EU.
- Innovative filtration technology; high adsorption capacity and retention rate with low differential pressure
- Validated performance data acc. to ISO 12500; reliable achievement of compressed air quality acc. to ISO 8573-1
- Flow-optimised design, minimum pressure loss for economic compressed air purification (saving of energy costs)



Depth filter AX

INDUSTRIES



- Chemical and pharmaceutical industry



- Gas industry



- Surface finishing



- Machine building industry and plant engineering / construction



- Energy and power generation

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Donaldson®
Ultrafilter

PRODUCT DESCRIPTION

The adsorption filter Ultrac A consists of 2 filter stages. At the adsorption stage oil vapour, hydrocarbons and odours are removed by activated carbon adsorption. Particles are removed at the depth filter stage, consisting of microfibre fleece. In addition, support fleece and an outer stainless steel support sleeve ensure proper fixation of the adsorption and filter stage.

The flow direction through the filter is from inside to outside.

At appropriate prepurification (see „Recommended prepurification“) a residual oil content of $< 0,003 \text{ mg/m}^3$ is achieved.

The specified performance data for the achievement of the compressed air quality classes according to ISO 8573-1 were validated according to ISO 12500-2.



**Cross section of
the depth filter AX**

The AX filter element is designed and developed for the following applications:

- **Special applications:**
High temperatures, low temperatures
Heavy duty / Outdoor
- **Technical gases:**
Gas manufacturing, gas processing
gas storage, gas transportation
Laboratory
- **Special gases:**
Selected, non-corrosive gases
of fluid group 1 + 2
Natural gas / Biogas

PRODUCT SPECIFICATIONS

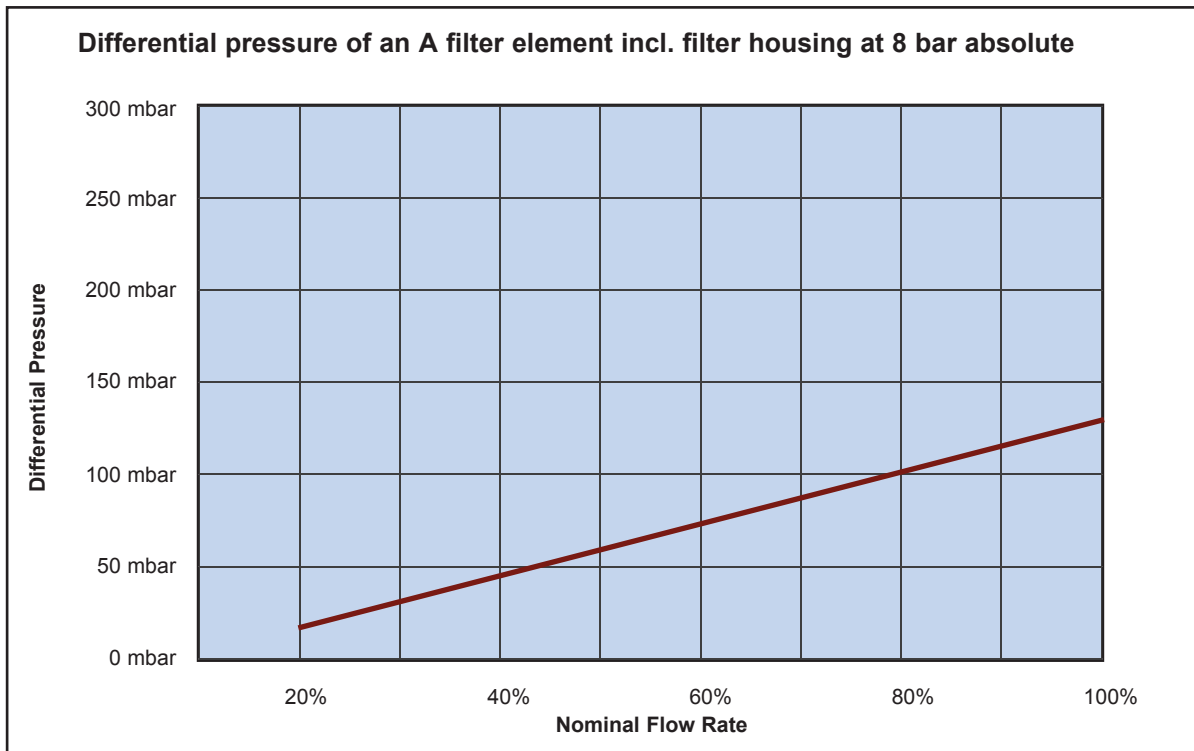
Features	Benefits
Intelligent overall concept	Flow range, filtration grades, efficiencies and available options perfectly meet requirements of air purification
Flow-optimised Design	Minimum pressure losses, thereby savings of energy costs
High packing density and inner surface of activated carbon medium	High adsorption capacity and improved efficiency guarantee optimum purification performance over the whole life time
Microfibre fleece depth filter stage at filter outlet	Improvement of particle retention - class 1 acc. to ISO8573-1 achievable

Materials	
Adsorption stage	Activated carbon granulate on support fleece
Filter medium (particle filter stage)	Binderfree borosilicate
Support fleece	Polyamide fleece
Bonding	Polyurethane
End caps	Aluminium
O-Rings	Viton: silicone free and free of compound (standard)
Support liner	Stainless steel 1.4301/ 304

Adsorption efficiency of A (some examples)			
Oil vapour	A	Methyl acetate	B
Benzene	A	Sulphuric acid	A
Ethane	D	Hydrogen sulphide	C
Toluene	A	Chlorine	B
Acetic acid	A	Freon	C
Methanol	B	Ammonia	C
Acetone	B	Citrus fruits	A
Isopropyl ether	A	Parfumes	A

Key
A = very good
B = good
C = poor
D = slight

PERFORMANCE DATA



Application data	
Recommended application temperature:	+10°C...+40°C (Tmax = +60°C)
Recommended prepurification:	Residual oil content (aerosols) < 0,01 mg/m³, e.g. by sub microfilter

Operating pressure bar g	1	2	3	4	5	6	7	8	9	10	11	12	13
Conversion factor fp	0,25	0,38	0,50	0,63	0,75	0,88	1,00	1,13	1,25	1,38	1,50	1,63	1,75
Operating pressure bar g	14	15	16	17	18	19	20	21	22	23	24	25	---
Conversion factor fp	1,88	2,00	2,13	2,25	2,38	2,50	2,63	2,75	2,88	3,00	3,13	3,25	---

Element Type	Nominal Flow Rate at 7 bar g m³/h*	Sizing example for pressure which deviates from nominal pressure
0035	35	$V_{nom} = 350 \text{ m}^3/\text{h}$, operating pressure = 9 bar (g) $V_{korr} = \frac{V_{nom}}{fp}$ $V_{korr} = \frac{350 \text{ m}^3/\text{h}}{1,25} = 280 \text{ m}^3/\text{h}$ Calculated size: Type 0320
0070	70	
0120	120	
0210	210	
0320	320	
0450	450	
0600	600	

* m³ related to 1 bar abs. and 20°C for air. Flow rates for other gases on request

CERTIFICATE

Certificate of compliance with the order

according to
DIN EN 10204 2.2

Confirmation of Design and Performance Data with Test Report.

Filter type	AX	Filter size	0035 - 0600
Retention of oil vapours			
Residual oil content (total) at appropriate prepurification		< 0,003 mg/m ³	
Service life of the activated carbon stage		up to 2000 operating hours (depending on pre purification, operating temperature, operating pressure, volume flow and oil grade)	


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