ultra.air GROUP ®
ultra.air ultrafilter

Replacement Element VF / FF / MF / SMF / AK

Donaldson DF P / V / M / S / A

(Particulate, Coalescing, Oil vapour removal)

Description

ultrafilter replacement filter elements have been developed for high efficient removal of solid particles, oil aerosols, water, hydrocarbons, vapours and odours from compressed air[1].
Filter elements are designed to fit into Donaldson DF filter housing.

Applications [2]

- Automotive
- Electronics
- Food & Beverage
- Chemical
- Petrochemical
- Plastics
- Paint
- General industrial application

[1] For any other technical gas please contact us or your local dealer
[2] Donaldson DF replacement filter element can be used in variety of applications. For applications not listed please contact us or your local dealer.

Filter Element Rating According to ISO 8573-1 (2010)

Donaldson DF type / *ultrafilter* type	Solid particles	Water	Oil
P / **VF**	Class 6	-	-
V / **FF**	Class 3	-	-
M / **MF**	Class 2	-	Class 2
S / **SMF**	Class 2	-	Class 1
A / **AK**	Class 2	-	Class 0/1

Validated according to ISO12500-1, ISO12500-2 and ISO12500-3

Technical Specification

Filtration grade name	P / **VF**[6]	V / **FF**[6]	M / **MF**[6]	S / **SMF**[6]	A / **AK**[6]
Operating temperature			1,5 - 65 °C 35 - 149 °F		1,5 - 45 °C 35 - 113 °F
Differential pressure (dry)	10 mbar 0,145 psi	40 mbar 0,290 psi	50 mbar 0,725 psi	90 mbar 1,160 psi	60 mbar 0,870 psi
Differential pressure (wet)	20 mbar 0,290 PSI	90 mbar 0,580 PSI	120 mbar 1,740 PSI	190 mbar 2,756 PSI	/
Particle retention (nominal)	99,99% (3 µm)	99,9999% (1 µm)	99,9999% (0,1 µm)	99,9999% (0,01 µm)	/
Particle retention rate ISO[3]	95 %	99,8 %	99,98 %	99,998 %	/
Residual oil content[4]	/	< 0,3 mg/m³	< 0,1 mg/m³	< 0,01 mg/m³	< 0,005 mg/m³
Capacity (ISO12500-2)[5]	/	/	/	/	20 min

(3) Tested according to ISO12500-3, 1bar(a), nominal flow, 03/10 P/VF, MPPS-(5µm); 03/10 V/FF, M/MF, S/SMF, MPPS-(0,3µm)
(4) Tested according to ISO12500-1, 03/10 V/FF, M/MF, S/SMF oil aerosol viscosity 32mm²/s, inlet concentration 10mg/m³
(5) Tested according to ISO12500-2, 03/10 A/AK, tested with n-Hexane, test concentration 100mg/kg, 80% saturation
(6) Cross reference ***ultrafilter*** vs. Donaldson DF filtration grades:

ultrafilter Pre filter type **VF** = P/VF = P
ultrafilter Finefilter type **FF** = V/FF = V
ultrafilter Microfilter type **MF** = M/MF = M
ultrafilter Submicrofilter type **SMF** = S/SMF = S
ultrafilter Activated Carbon filter type **AK** = A/AK =A

ULTRAFILTER
THE FILTRATION MANUFACTURER

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Sizes

Filter Element Size	Dimensions [mm]	Flow Capacity [Nm³/h]	Flow Capacity [scfm]
XXX 0035 _	Ø=40; h=63	19,7	11,59
XXX 0070 _	Ø=51; h=81	47,2	27,78
XXX 0120 _	Ø=51; h=125	90,4	53,2
XXX 0210 _	Ø=69,1; h=141,5	191,5	112,7
XXX 0320 _	Ø=69,1; h=200,5	361,2	212,6
XXX 0450 _	Ø=94,4; h=226,5	627,1	369
XXX 0600 _	Ø=94,4; h=260,5	900,9	530
XXX 0750 _	Ø=94,4; h=300,5	882,0	519
XXX 1100 _	Ø=94,4; h=420,5	1295,2	762

XXX = ***ultrafilter*** filtration grade VF, FF, MF, SMF or AK ø=Diameter; h=Height
_ = Filtration grade Donaldson DF P, V, M, S or A - Example for ***ultrafilter*** designation: SMF 0450 S

Materials

	P / **VF**	V / **FF**	M / **MF**	S / **SMF**	A / **AK**
Filter media	Acrylic fibers, cellulose	Borosilicate micro fibers	Borosilicate micro fibers	Borosilicate micro fibers	Borosilicate micro fibers
Adsorption media					Activated carbon granulate PES (Polyester)
Drainage media	/	Polyester based polyurethane			
Support (inner-outer)	Stainless Steel 1.4301				
Bonding	Polyurethane				
Endcaps	PA6 with 30% glass fibers				
Sealing	NBR				

Correction Factors

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).
CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x C_{OP}

Operatin Pressure

[bar]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
[psi]	29	44	58	72	87	100	115	130	145	160	174	189	203	218	232
C_{OP}	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38	1,50	1,63	1,75	1,88	2,00	2,13

Maintenance

Replace filter element grade P/**VF**, V/**FF**, M/**MF**, and S/**SMF** at least once per year or when pressure drop reaches 350mbar.
Replace filter element grade A/**AK** at least every 6 months.

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