

Product Data Sheet

Filter Elements ERWK.. (for Walker filter housings)

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Field of application

Type ERWK filter elements of filtration grades V, ZF, XF and A are suitable for Walker filter housings. We recommend the following filtration grade assignment:

	FST GmbH	Walker
Coarse	V	X5
General purpose	ZF	X1
Fine	XF	XA
Activated carbon	A	AC

Features

Filter elements of filtration grade V (coarse filter) consist of a pleated coarse filter media, filter elements of filtration grades ZF and XF (coalescing filters) of a pleated depth filter media and a separated external drainage sock (outside foam sock). Thanks to the pleating technology the effective filter surface is increased many times, resulting in much higher dirt holding capacity and a longer service life. At the same time, flow resistance and therefore differential pressure, generated by the filter element, are considerably reduced. To ensure a high operational safety, the pleated depth filter cylinder has at least two or even more layers.

Filter elements of filtration grade A (adsorption filter) comprise of activated carbon granulate, embedded between two coarse filter layers. Using loose activated carbon granulate results in an averagely large amount of activated carbon (1.2 kg of activated carbon for each m² of filter surface). This considerably increases the separation capability and the service life. The 3-layer design contributes to an adequate thickness of the activated carbon bed and thus to a long contact time between compressed air and activated carbon. This results in extremely low residual oil contents.

All the features mentioned above contribute to a filter element which has a high performance (high separation efficiency) combined with economic efficiency (low differential pressure, long service life).



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Basic Data

Model	Nominal volume flow (VN) ^{*1}	Max. operating pressure	Min./Max. operating temperature
ERWK361	35 m ³ /h (0.94)	---	+2°C - +65°C
ERWK371	56 m ³ /h (1.50)		
ERWK381AC	56 m ³ /h (0.69)		
ERWK511	112 m ³ /h (1.28)		
ERWK711	216 m ³ /h (1.12)		
ERWK731	300 m ³ /h (0.71)		
ERWK811	250 m ³ /h (1.03)		
ERWK821	540 m ³ /h (1.02)		
ERWK831	800 m ³ /h (1.50)		
ERWK851	1,150 m ³ /h (1.26)		
ERWK1251	1,620 m ³ /h (1.09)		
ERWK1261	2,210 m ³ /h (1.18)		
ERWK1281	2,600 m ³ /h (1.11)		
ERWK139	2,160 m ³ /h (0.91)		
ERWK88	1,100 m ³ /h (0.78)		

*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure

The factor in brackets specifies the relation of the flow of the filter element for each cm² of surface compared to the EFST30 reference element.

Purity classes according to ISO 8573-1

Contamination	V	ZF	XF	A
Solid particles ^{*2}	Class 6	Class 2	Class 1	(Class 2)
Water content	---	---	---	---
Total oil content ^{*2}	Class 4 ^{*3}	Class 2 ^{*3}	Class 1 ^{*3}	Class 0-1 ^{*4}

*2 - typical result, on the assumption of suitable inlet concentrations as well as operating and marginal conditions

*3 - the oil vapour content is not taken into account, it may reduce the purity class

*4 - the liquid residual oil content is not taken into account and may reduce the purity class (should be separated in advance by means of fine filtration)

Volume flow conversion factors

«F1» - Pressure (in bar)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.125	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	1.88	2.00	2.13
17	18	19	20	25	30	35	40	45	50							
2.24	2.35	2.45	2.6	3.1	3.6	4.0	4.4	4.7	5.1							

«F2» - Temperature (in °C)

2	5	10	15	20	25	30	35	40	45	50	55	60	65
1.07	1.05	1.04	1.02	1.00	0.98	0.97	0.95	0.94	0.92	0.91	0.89	0.88	0.87

Calculation of the converted volume flow

Converted volume flow VK	Nominal required volume flow VN _{min}
$VK = VN \times F1 \times F2$	$VN_{min} = VK / F1 / F2$

VK : Converted volume flow calculated for the operating conditions

VN_{min}: Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions

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Maintenance rules

Pressure range	V, ZF, XF	A
0-4 bar	Replacement of filter element once a year, the latest on a differential pressure of 50 mbar	Replacement of filter elements every 3 months, depending on the operating temperature and therefore on the specified oil vapour amount earlier, if required
5-16 bar	Replacement of filter element once a year, the latest on a differential pressure of 350 mbar	
17-50 bar	Replacement of filter element once a year, the latest on a differential pressure of 500 mbar	
> 50 bar	Replacement of filter element once a year, the latest on a differential pressure of 750 mbar	

Product specific data

Specification	V	ZF	XF	A
Differential pressure	40 mbar	80 mbar	120 mbar	90 mbar
Separation efficiency, dry (nominal)	99.99% (5 μ)	99.9999% (0.1 μ)	99.9999% (0.01 μ)	---
Residual oil content (nominal)	---	$\leq 0.5 \text{ mg/m}^3$	$\leq 0.01 \text{ mg/m}^3$	$\leq 0.005 \text{ mg/m}^3$

Materials

Component	
Coarse filter media	Cellulosic fibres, impregnated (acrylic basis)
Depth filter media, drainage media	Glass fibres, PE (polyester)
Foam sock	PU (polyurethane)
Filter media activated carbon	Activated carbon granulate, PES (polyester) fibre layer
Bonded joint	PU (polyurethane)
Cylinders	Stainless steel 1.4301
End caps	Aluminium
Sealing materials	NBR

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Dimensions

Model	Height (total height)	Ø	Ø Inlet (inside)
ERWK361	73 mm (81 mm)	43 mm	12 mm
ERWK371	73 mm (81 mm)	43 mm	12 mm
ERWK381AC	117 mm (126 mm)	38 mm	14 mm
ERWK511	113 mm (122 mm)	55 mm	20 mm
ERWK711	150 mm (164 mm)	72 mm	32 mm
ERWK731	300 mm (314 mm)	72 mm	32 mm
ERWK811	149 mm (163 mm)	83 mm	32 mm
ERWK821	300 mm (314 mm)	83 mm	32 mm
ERWK831	301 mm (316 mm)	83 mm	41 mm
ERWK851	500 mm (515 mm)	83 mm	41 mm
ERWK1251	497 mm (515 mm)	130 mm	68 mm
ERWK1261	615 mm (633 mm)	130 mm	68 mm
ERWK1281	763 mm (781 mm)	130 mm	68 mm
ERWK139	766 mm (782 mm)	130 mm	77 mm
ERWK88	790 mm (799 mm)	83 mm	50 mm

Classification according to Pressure Equipment Directive 2014/68/EU for group 2 fluids

Model	Volume	Category
All models	Filter elements are not part of the Pressure Equipment Directive 2014/68/EU	

Other Directives

Model	
All Models	---