

Product Data Sheet

Filter Elements ERHI.. (for Hiross filter housings)


Version: 1.9.0

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Date: 25.03.2020

Field of application

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

		Hiross
Coarse	V	Q
General purpose	ZF	P
Fine	XF	S
Activated carbon	A	C

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
ERHI005	31.8 m ³ /h (0.99)	---	+2°C - +65°C
ERHI010	60 m ³ /h (0.91)		
ERHI016	96 m ³ /h (0.83)		
ERHI022	132 m ³ /h (0.93)		
ERHI030	180 m ³ /h (0.97)		
ERHI045	270 m ³ /h (0.97)		
ERHI072	432 m ³ /h (0.90)		
ERHI135	810 m ³ /h (1.08)		
ERHI175	1,050 m ³ /h (1.03)		
ERHI205	1,230 m ³ /h (1.01)		
ERHI250	1,500 m ³ /h (0.98)		
ERHI280	1,680 m ³ /h (0.68)		
ERHI300	1,800 m ³ /h (1.28)		
ERHI370	2,220 m ³ /h (1.14)		

*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	PA6 (polyamide) 30% glass fibres
Sealing materials	NBR

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Dimensions

Model	Height (total height)	Ø	Ø Inlet (inside)
ERHI005	66 mm (74 mm)	35 mm	13 mm
ERHI010	78 mm (84 mm)	50 mm	21 mm
ERHI016	126 mm (132 mm)	50 mm	21 mm
ERHI022	152 mm (158 mm)	50 mm	21 mm
ERHI030	156 mm (164 mm)	62 mm	32 mm
ERHI045	225 mm (233 mm)	62 mm	32 mm
ERHI072	372 mm (380 mm)	62 mm	32 mm
ERHI135	382 mm (390 mm)	87 mm	50 mm
ERHI175	512 mm (520 mm)	87 mm	50 mm
ERHI205	610 mm (618 mm)	87 mm	50 mm
ERHI250	760 mm (768 mm)	87 mm	50 mm
ERHI280	950 mm (970 mm)	108 mm	64 mm
ERHI300	550 mm (570 mm)	108 mm	64 mm
ERHI370	750 mm (770 mm)	108 mm	64 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	---