

Product Data Sheet

Water Separator Inserts EFST..WHP

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Field of application

Type EFST water separator inserts of filtration grade WHP are mainly designed for separating great amounts of liquids from compressed air flows in high pressure levels (liquid separation), i.e. separating compressed air condensate generated in intercoolers. Larger solid contaminants are, of course, also separated during this process. Filtration grade WHP is therefore used, if great amounts of liquid or coarse contaminants need to be separated from a compressed air flow.

Features

Type EFST water separator inserts of filtration grade WHP fully consist of stainless steel - stainless steel cylinders, stainless steel guidance plate and stainless steel end caps - so even greatest pulsations within the compressed air system cannot cause any harm to the water separator insert. This feature is fundamental for an application in conjunction with high pressure piston compressors when condensate from intercoolers needs to be separated.

For a proper operation of the water separator insert the flow direction needs to be from inside to outside. The orifice region of the guidance plate should be on the opposite side of the separator housing outlet.

Compressed air entering the separator housing is guided inside the water separator insert to the bottom of the filter housing, leaving the water separator insert at the opposite side of the separator housing outlet. Due to the guidance plate and end cap design a great amount of liquid is already separated at that level (1st stage). On its way to the separator housing outlet the compressed air has to flow around the guidance plate and top end cap, leading to further separation of liquids (2nd and 3rd stage). A kind of cyclone swirl is avoided intentionally in order to keep the differential pressure low. The bottom end cap acts at the same time as a rebound plate, avoiding contaminants, already separated and collected in the bottom part of the filter housing, can re-enter the compressed air flow.

All the features mentioned above are a contribution to a water separator which has a high performance (water separation efficiency) combined with economic efficiency (low differential pressure) and maximum operating safety (integrated metal design).



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Specifications subject to change without notice

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Basic data

Model	Nominal volume flow (VN) ^{*1}	Max. operating pressure	Min./Max. operating temperature
EFST 50 WHP	70 m ³ /h	---	+2°C - +80°C
EFST 70 WHP	100 m ³ /h		
EFST 90 WHP	160 m ³ /h		
EFST 110 WHP	330 m ³ /h		

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

Purity classes according to ISO 8573-1

Contamination	
Solid particles ^{*2}	Class X
Water content ^{*2}	Class 7
Total oil content ^{*2}	Class X

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

Volume flow conversion factors

«F1» - Pressure (in bar)

75	100	125	150	175	200	225	250	275	300	325	350
6.5	7.6	8.5	9.3	9.9	10.5	11.0	11.5	11.9	12.3	12.7	13.0

«F2» - Temperature (in °C)

2	5	10	15	20	25	30	40	50	60	70	80
1.07	1.05	1.04	1.02	1.00	0.98	0.97	0.94	0.91	0.88	0.85	0.83

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

Maintenance rules

Pressure range	
All models	---

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Product specific data

Specification	
Efficiency (max.)	99.9%

Materials

Component	
Cylinder, guidance plate	Stainless steel 1.4301 (AISI 304, V2A)
Bonded joint	PU (polyurethane)
End caps	Stainless steel 1.4301 (AISI 304, V2A)
Sealing materials	NBR

Dimensions

Model	Height (total height)	Ø	Ø Inlet (inside)
EFST 50 WHP	73 mm (73 mm)	51 mm	24 mm
EFST 70 WHP	142 mm (142 mm)	51 mm	24 mm
EFST 90 WHP	118 mm (124 mm)	75 mm	44 mm
EFST 110 WHP	218 mm (224 mm)	75 mm	44 mm

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

Model	Volume	Category
All models	Water separator inserts are not part of the Pressure Equipment Directive 2014/68/EU	

Other directives

Model	
All models	---

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