

Product Data Sheet

Activated carbon oil vapour adsorber

DSS 85-1470 A

suitable for DTS dryer series

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Field of application

Type DSS 85-1470 A activated carbon oil vapour adsorber with filling A (activated carbon) are mainly designed for separating oil vapours from compressed air flows (dry-type separation) in pressure levels up to 11 bar for compressed air without aggressive substances. Activated carbon oil vapour adsorbers are therefore used, if there are no liquid contaminants, especially water or oil, in the compressed air flow. Due to the properties of activated carbon some other gaseous contaminants are separated as well.

Features

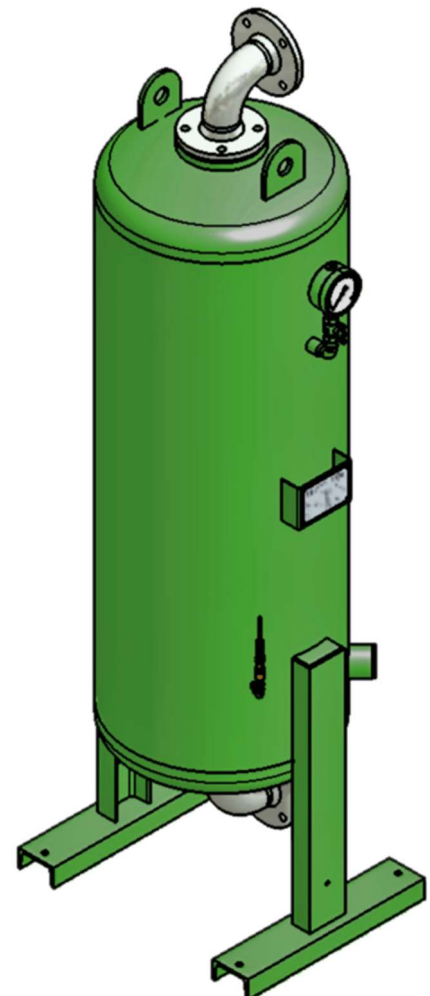
Type DSS 85-1470 A activated carbon oil vapour adsorber vessels are made from high-quality welded steel parts. For surface finishing purposes and for increasing the resistance the vessels are sand-blasted and primed (except for the sealing surfaces). Finally, an additional layer is painted on the outer side.

Compressed air, flowing from top to bottom, enters the vessel through the top inlet connection, passes the top flow distributor, then the activated carbon filling resting on a support screen. Within the activated carbon filling oil vapours and other organic substances (mainly long-chain hydrocarbons) are separated by an adsorption process. Finally, the treated and thus cleaned compressed air leaves the vessel at the bottom outlet connection.

The flow distributor, supplied as standard, distribute the compressed air flow to the entire surface of the activated carbon filling thus providing an evenly distributed flow. At the same time the activated carbon granulates are reliably kept inside the vessel.

An oil indicator equipped with pressure regulator and manual valve is provided as a standard as well. An optional 1 micron downstream filter (fine filter) is recommended to hold back abrasion of the activated carbon.

The activated carbon oil vapour adsorbers comply with the requirements of the Pressure Equipment Directive 2014/68/EU, and have the CE marking of this European directive.



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Specifications subject to change without notice

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Basic data

Model	Nominal volume flow (VN) ^{*1}	Min./Max. operating pressure	Min./Max. operating temperature
DSS 85 A	1.090 m ³ /h	0 - 11 bar (higher operating pressures on request)	+2°C - +60°C
DSS 125 A	1.690 m ³ /h		
DSS 155 A	2.080 m ³ /h		
DSS 215 A	2.920 m ³ /h		
DSS 250 A	3.400 m ³ /h		
DSS 300 A	4.110 m ³ /h		
DSS 380 A	5.230 m ³ /h		
DSS 430 A	5.920 m ³ /h		
DSS 500 A	6.880 m ³ /h		
DSS 540 A	7.430 m ³ /h		
DSS 650 A	9.050 m ³ /h		
DSS 720 A	10.000 m ³ /h		
DSS 860 A	11.940 m ³ /h		
DSS 940 A	13.020 m ³ /h		
DSS 1100 A	15.320 m ³ /h		
DSS 1280 A	17.750 m ³ /h		
DSS 1470 A	20.420 m ³ /h		

*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure, 35°C inlet temperature

Purity classes according to ISO 8573-1

Contamination	
Solid particles ^{*2}	Class X
Water content ^{*2}	---
Total oil content ^{*2*3}	Class 0-1

*2 - typical result, on the assumption that the suitable inlet concentrations and operating and marginal conditions are given

*3 - 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	1,5	1,63	1,75	1,88	2,00	2,13

«F2» - Temperature (in °C)

2	5	10	15	20	25	30	35	40	45	50
1.07	1.05	1.04	1.02	1.00	0.98	0.97	0.92	0.86	0.75	0.60

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

All models	<ul style="list-style-type: none"> ■ If required: <ul style="list-style-type: none"> - Check residual oil content (oil indicator), if required replace activated carbon*⁴ ■ Every 12 months: <ul style="list-style-type: none"> - Replace activated carbon and oil indicator tube*⁴ ■ Every 48 months: <ul style="list-style-type: none"> - Replace seals ■ Every 5 /10 years <ul style="list-style-type: none"> - Pressure vessel inspection acc. to Ordinance on Industrial Safety and Health of September 27th, 2002 (BGBl. I p. 3777) §15
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*4 - The activated carbon must be disposed of according to the European waste code. A possible oil contamination must be taken into account.

Product specific data

Specification	
Oil vapour content (nominal)* ⁵	≤ 0.003 mg/m ³

*5 - at an inlet concentration ≤ 0.01 mg/m³, the liquid residual oil content is not taken into account (should be separated in advance by means of fine filtration)

Model	Amount of activated carbon
DSS 85 A	86,7 kg
DSS 125 A	130,6 kg
DSS 155 A	161,4 kg
DSS 215 A	230,3 kg
DSS 250 A	263,4 kg
DSS 300 A	318,8 kg
DSS 380 A	410,2 kg
DSS 430 A	467,9 kg
DSS 500 A	518,6 kg
DSS 540 A	563,3 kg
DSS 650 A	724,8 kg
DSS 720 A	804,4 kg
DSS 860 A	959,2 kg
DSS 940 A	1.051,4 kg
DSS 1100 A	1.256,6 kg
DSS 1280 A	1.456,6 kg
DSS 1470 A	1.692,8 kg

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Materials

Component	
Vessel and supports	Steel (P265GH, ST37.0, St35.8)
Coating	<p><u>Inside</u> : 1/3 lower part of the vessels painted with "Brantho KorruX"</p> <p><u>Outside</u> : sand blasted SA2,5 (ISO8501) ; 1-component primer on alkyd resin base ; dry thickness approx.40 µm (e.g. DuPont PercoTop 021, or similar product) 2-component acrylic resin paint ; dry thickness approx. 40 µm (e.g. DuPont PercoTop 9600, or similar product)</p>
Desiccant support screen	Stainless steel 1.4301
Pipe connections	Steel, galvanized
Sealing materials	PTFE, Viton, Klingersil C4400
Screws	5.6 and 8.8 steel, zinc-plated
Filling	Activated carbon

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Connections, dimensions and weight

Model	Connection	Height	Width	Depth	Weight
DSS 85 A	DN 50 - PN11	2325 mm	410 mm	530 mm	240 kg
DSS 125 A	DN 80 - PN11	2705 mm	500 mm	600 mm	350 kg
DSS 155 A	DN 80 - PN11	2720 mm	500 mm	600 mm	410 kg
DSS 215 A	DN 80 - PN11	2765 mm	600 mm	750 mm	550 kg
DSS 250 A	DN 100 - PN11	2885 mm	650 mm	800 mm	570 kg
DSS 300 A	DN 100 - PN11	2910 mm	710 mm	850 mm	655 kg
DSS 380 A	DN 100 - PN11	2970 mm	800 mm	1000 mm	950 kg
DSS 430 A	DN 100 - PN11	3210 mm	850 mm	1100 mm	1050 kg
DSS 500 A	DN 150 - PN11	3235 mm	950 mm	1165 mm	1340 kg
DSS 540 A	DN 150 - PN11	3250 mm	1000 mm	1200 mm	1410 kg
DSS 650 A	DN 150 - PN11	3520 mm	1000 mm	1250 mm	1550 kg
DSS 720 A	DN 150 - PN11	3560 mm	1100 mm	1325 mm	1850 kg
DSS 860 A	DN 200 - PN11	3585 mm	1200 mm	1400 mm	2100 kg
DSS 940 A	DN 200 - PN11	3605 mm	1250 mm	1500 mm	2475 kg
DSS 1100 A	DN 200 - PN11	3670 mm	1350 mm	1600 mm	2890 kg
DSS 1280 A	DN 200 - PN11	3680 mm	1450 mm	1700 mm	3900 kg
DSS 1470 A	DN 200 - PN11	3720 mm	1550 mm	1800 mm	4620 kg

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

Model	Volume	Category	Marking
DSS 85 A	202 liters	III	CE 0525
DSS 125 A	305 liters	IV	
DSS 155 A	376 liters		
DSS 215 A	530 liters		
DSS 250 A	627 liters		
DSS 300 A	760 liters		
DSS 380 A	980 liters		
DSS 430 A	1115 liters		
DSS 500 A	1300 liters		
DSS 540 A	1420 liters		
DSS 650 A	1770 liters		
DSS 720 A	1965 liters		
DSS 860 A	2400 liters		
DSS 940 A	2650 liters		
DSS 1100 A	3085 liters		
DSS 1280 A	3650 liters		
DSS 1470 A	4250 liters		

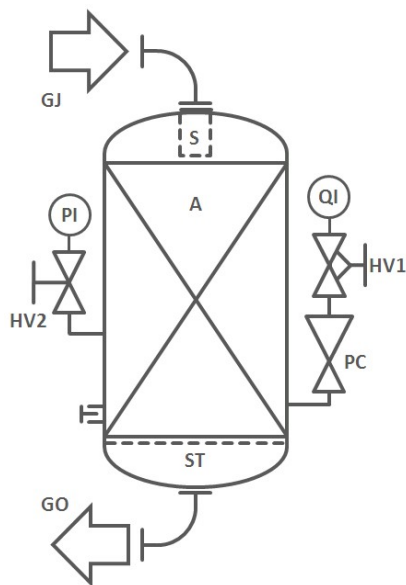
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Other Directives

Model	
All models	Use of Directive 2014/68/EU replaces Directive 87/404/EC Design according to Directive 2014/68/EU and AD Codes

Flow diagram (PID)



- GJ** Fluid inlet
- S** Flow distributor
- PI** Gauge
- HV2** Manual valve
- QI** Oil indicator
- PC** Pressure regulator
- HV1** Manual valve
- Granulate evacuation
- ST** Support screen
- GO** Fluid outlet