

# Product Data Sheet

## Oil/Water Separator CSD..

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### Field of application

Oil/water separator of the CSD series are designed for compressed air condensate treatment. The condensate, mainly consisting of water and contaminated with some amounts of not emulsified, floating oil is treated according to the latest technologies. The oil is separated from the water, as a result the condensate can be discharged into the sewage system.

### Features

Oil/water separator of the CSD series consist of a plastic collecting vessel with integrated filter stages.

The compressed air condensate first enters the pressure relief chamber while any remaining pressure is fully exhausted to atmosphere. Thus the condensate may enter the oil/water separator either simply by gravity or under pressure (up to 10 bar). Condensate entering the oil/water separator may create oil mist or oil smell which is adsorbed by filters connected to the pressure relief chamber. The condensate then enters the sedimentation stage via a pre-filter, which already holds back very coarse contaminants.

In the sedimentation stage, the condensate "rests" while large oil droplets rise to the top and thus separate from the water, leaving via the oil outlet into the oil canister. Models CSD 5-160 additionally offer a removable and thus easy to clean sedimentation insert with integrated pre-filter.

The already pre-purified condensate is treated in further filter stages, consisting of oil storage and activated carbon filter bags, further separating the oil from the water down to residual values. The separated oil is stored within and thus disposed with the filter bags. The finally treated condensate leaves the oil/water separator via the water outlet.

All separator models are provided with a test valve, a test set and filters in the pressure relief chamber avoiding smell. Models CSD 5-160 additionally provide a signal floater enabling a visual filter test (for clogged filters) and an adjustable overflow tub at the oil outlet.



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### Basic data

Model	Nominal volume flow (VN)*1		Nominal condensate quantity		Max. operating pressure	Min./Max. operating temperature
	Turbine oils VDL oils	Synthetic oils VCL oils	Turbine oils VDL oils	Synthetic oils VCL oils		
CSD3	150 m³/h	150 m³/h	1.3 litres/h	1.3 litres/h	---	+1°C - +60°C
CSD5	300 m³/h	300 m³/h	2.6 litres/h	2.6 litres/h		
CSD10	600 m³/h	450 m³/h	5.3 litres/h	4.0 litres/h		
CSD20	1,200 m³/h	900 m³/h	10.5 litres/h	7.9 litres/h		
CSD40	2,400 m³/h	1,800 m³/h	21.1 litres/h	15.8 litres/h		
CSD80	4,800 m³/h	3,600 m³/h	42.2 litres/h	31.6 litres/h		
CSD160	9,600 m³/h	7,200 m³/h	84.4 litres/h	63.2 litres/h		

\*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure, intake air of compressor 25°C at 60% relative humidity, 35°C compressed air temperature, for non-emulsifying oils.

### Volume flow conversion factors

«F1» - Climate factor (intake temperature and relative humidity of compressors suction air)

	15°C	20°C	25°C	30°C	35°C	40°C	45°C
50%	0.72	0.98	1.30	1.71	2.24	2.88	3.69
60%	0.87	1.17	1.56	2.05	2.68	3.46	4.43
70%	1.01	1.37	1.82	2.40	3.13	4.04	5.17
80%	1.16	1.56	2.08	2.74	3.58	4.61	5.90
90%	1.30	1.76	2.34	3.08	4.02	5.19	6.64

«F2» - System factor aftercooler (operating pressure and compressed air discharge temperature of aftercooler)

	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar	11 bar	12 bar	13 bar	14 bar	15 bar	16 bar
3°C	0.14	0.11	0.10	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04
5°C	0.15	0.13	0.11	0.10	0.09	0.08	0.07	0.06	0.06	0.06	0.05	0.05	0.05
10°C	0.21	0.18	0.15	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.07	0.06
15°C	0.29	0.24	0.21	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.10	0.09	0.09
20°C	0.39	0.33	0.28	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.13	0.12	0.11
25°C	0.52	0.43	0.37	0.32	0.29	0.26	0.24	0.22	0.20	0.19	0.17	0.16	0.15
30°C	0.68	0.57	0.49	0.43	0.38	0.34	0.31	0.29	0.26	0.24	0.23	0.21	0.20
35°C	0.89	0.75	0.64	0.56	0.50	0.45	0.41	0.37	0.34	0.32	0.30	0.28	0.26

### Calculation of the converted volume flow

Converted volume flow VK	Nominal required volume flow VN <sub>min</sub>
$VK = VN / (F1 - F2)$	$VN_{min} = VK \times (F1 - F2)$

VK : Converted volume flow calculated for the operating conditions

VN<sub>min</sub>: Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions

### Maintenance rules

All models and sizes	Every 14 days: water test probe (turbidity test) - visual inspection
	Once a year: filter exchange once a year, minimum - earlier, if necessary

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### Product-specific data

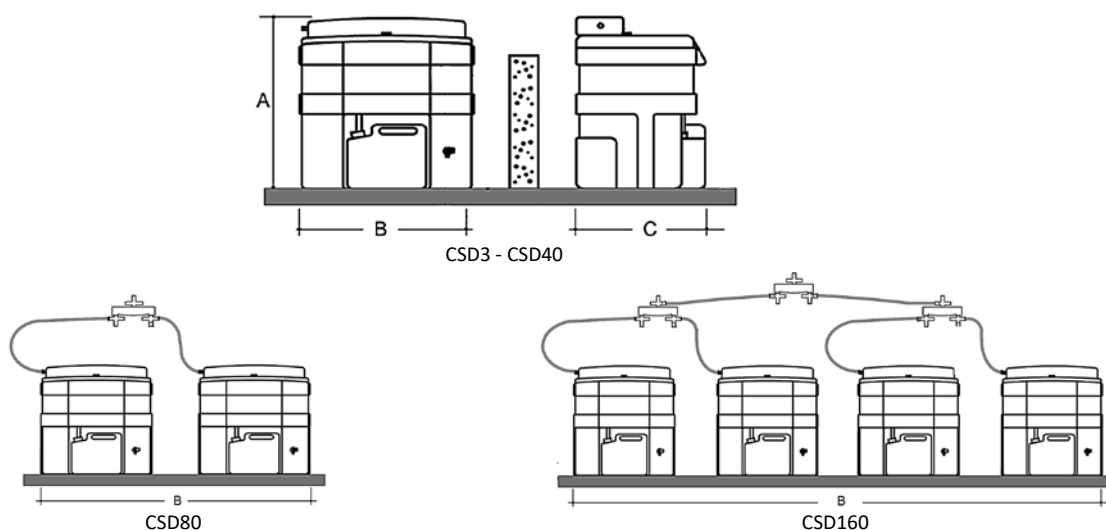
Specification	
Residual oil content	< 20 mg/litres

### Materials

Component	
Vessel, body and parts	PE (polyethylene)
Filter	PU (polyurethane), PP (polypropylene), activated carbon

### Connections, dimensions and weight

Model	Vessel volume (empty, without filter installed)	Connections of condensate inlet	Connection of water outlet	Height (A)	Width (B)	Depth (C)	Weight (empty)
CSD3	25 litres	1/2	G 1/2	555 mm	345 mm	320 mm	9 kg
CSD5	50 litres	G1, 3x G 1/2	G 1	655 mm	445 mm	430 mm	20 kg
CSD10	75 litres	G1, 3x G 1/2	G 1	735 mm	495 mm	460 mm	24 kg
CSD20	150 litres	G1, 3x G 1/2	G 1	840 mm	680 mm	510 mm	35 kg
CSD40	300 litres	G1, 3x G 1/2	G 1	985 mm	790 mm	660 mm	67 kg
CSD80	2x 300 litres	G 1	2x G 1	985 mm	660 mm	136 kg	
CSD160	4x 300 litres	G 1	4x G 1	985 mm	3760 mm	660 mm	272 kg



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

Model	Volume	Category
All models and sizes	Oil/water separators are not part of the Pressure Equipment Directive 2014/68/EU	

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### Other Directives

Models	
All models and sizes	<p>Waste code according to European waste catalogue (EWC):</p> <ul style="list-style-type: none"> <li>■ Filter:           <ul style="list-style-type: none"> <li>15 - WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTERMATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED</li> <li>15 02 - absorbents, filter materials, wiping cloths and protective clothing</li> <li><b>15 02 02</b> - absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances</li> </ul> </li> <li>■ Oil*<sup>2</sup> (canister):           <ul style="list-style-type: none"> <li>13 - OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)</li> <li>13 02 - waste engine, gear and lubricating oils</li> <li><b>13 02 05</b> - mineral-based non-chlorinated engine, gear and lubricating oils</li> <li><b>13 02 06</b> - synthetic engine, gear and lubricating oils</li> </ul> </li> <li>■ Oil sludge*<sup>2</sup> (sedimentation stage):           <ul style="list-style-type: none"> <li>13 - OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)</li> <li>13 05 - oil/water separator contents</li> <li><b>13 05 02</b> - sludges from oil/water separators</li> </ul> </li> </ul>

\*2 - May differ for some customers. Contact the manufacturer or the service partner of the oil or observe the safety data sheet.

### Flow diagram (example)

