

Droplet separator



Type
HF - TA
and
HF - TAD



Droplet separator used to separate liquids from gas flows



Description

The droplet separator like Type TA and Type TAD are used in the ventilation-, climate- and process engineering and separate liquid drops from gaseous media like air or process gases. The gas/liquid mixture flows through curved profile packets with pockets. The droplet separator cannot follow because of the inertia of the direction change and flow vertically down along the profile surfaces (see sample image, profile view from above).



Additional demister / Aerosol separator

Gas / liquid mixtures tend to fog formation. These aerosols consist of small solid or liquid particles and cannot be separated from the mounted inertia profiles because of their small size and mass.

In this use case, a droplet separator has to be used with an additional aerosol separator (TAD). These close meshed plastic knit fabrics between the two profile packets effect a fusion of the aerosols to bigger drops, which flow directly down or which will be separated by the following profile packet.

Materials

According to the requirements of chemical or physical charges, thermoplastics like PP, PPs, PE or PVC are used.

In potentially explosive atmospheres electric conductive plastics like PPs-el linked to corrosion protected, electric conductive profile packets (TA). Higher charges by temperature or pressure will be performed as a reinforced version of the casing linked to GFK.



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Construction

The droplet separator TA consists of a separator casing with respectively profile packets one behind the other and gas inlet nozzles / gas outlet nozzles with flange connection.

Type TAD has the additional aerosol separator integrated between two profile packets.

A spray attachment (optionally) in the gas inlet, cleans in discontinuous distances the profiles, because some substances in the gas flow tend to crystallisation when oversaturated. When these crystals settle down at the profiles, it will cause on a long term perspective to changes in the cross-section in the separator packet and restricted function of the droplet.

A supplied siphon for the connection to the discharge pipe prevents from suction of false air, which influences the function of the separator.

Mounting und Maintenance

The droplets separators are used for a horizontal perfusion with vertically mounted profile packets. An arrow at the casing shows the flow direction. In the area of the gas inlet nozzle and the gas outlet nozzle a relaxation zone of a minimum size of 3 times the nominal diameter should assure a regular in- and out flow. An optional dismantling of the profile packets and of the aerosol separator laterally or to the upside enables a quick user friendly cleaning and maintenance. The cleaning intervals have to be fixed by the operator depending on the operating intervals. Because of frost hazard the droplet separator should not be mounted outside.

Technical Data

TA and TAD are characterized by high separator performance on low pressure differences depending on the parameters of the wind flow situation, gas property and temperature we guarantee following values:

Separator grades:

TA 99,9 % of all marginal droplets > 15µm

TAD 99,9 % of all marginal droplets > 8µm

Pressure differences:

TA 200 - 620 Pa

TAD 160 - 520 Pa

Volume flows:

TA 250 cbm/h to 158.000 cbm/h

TAD 250 cbm/h to 100.000 cbm/h

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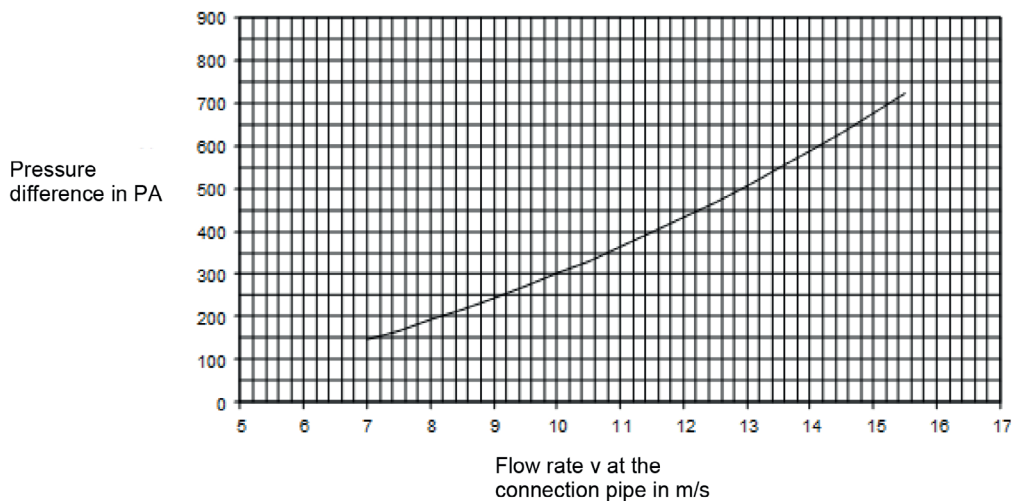


Size	Air quantity		Measurement chart droplet separator TA													Water - needs l/min on 3 bar
	from m³/h	to m³/h	D mm	D1 mm	B mm	C mm	H mm	L mm	H1 mm	LK mm	E mm	s mm	x Pcs.	DA mm	DA 1 mm	
1	250	450	110	140	272	370	346	750	226	150	170	8	8	20	32	2,5
2	350	620	125	160	292	370	366	790	236	165	185	8	8	20	32	3
3	580	1.020	160	200	332	370	406	830	256	200	230	8	8	20	32	4,5
4	900	1.600	200	250	382	370	456	900	281	240	270	8	8	20	32	6
5	1.400	2.500	250	315	447	370	520	1000	313	290	320	10	12	20	32	7,5
6	2.200	3.900	315	400	532	370	606	1000	356	350	395	10	12	20	50	9
7	2.900	5.000	355	450	577	370	650	1000	378	400	435	10	12	20	50	12
8	3.600	6.350	400	500	632	370	706	1000	406	445	480	10	16	20	50	15
9	4.600	8.100	450	565	697	370	770	1100	438	510	560	15	16	20	50	20
10	5.700	10.000	500	630	762	370	836	1200	471	560	610	15	20	20	63	25
11	8.200	14.300	560/630	750	882	370	956	1300	531	628/680	660/730	15	24	25	63	30
12	11.200	19.400	710	875	1007	370	1080	1450	593	760	810	15	24	25	63	30
13	14.400	25.200	800	1000	1132	370	1206	1600	656	866	916	15	28	25	63	36
14	18.500	32.000	900	1130	1262	370	1336	1800	721	966	1016	15	32	25	63	36
15	22.600	40.000	1000	1260	1392	370	1466	2000	786	1066	1116	15	36	25	63	48
16	35.400	62.000	1250	1500	1636	394	1758	2300	908	1320	1370	15	44	32	63	54
17	44.000	78.000	1400	1700	1836	394	1958	2600	1008	1470	1520	15	48	32	63	54
18	58.000	100.000	1600	1900	2040	398	2160	2900	1110	1670	1720	15	56	32	63	67,5
19	90.000	158.000	2000	2400	2540	398	2654	3350	1354	2070	2120	15	68	32	63	67,5

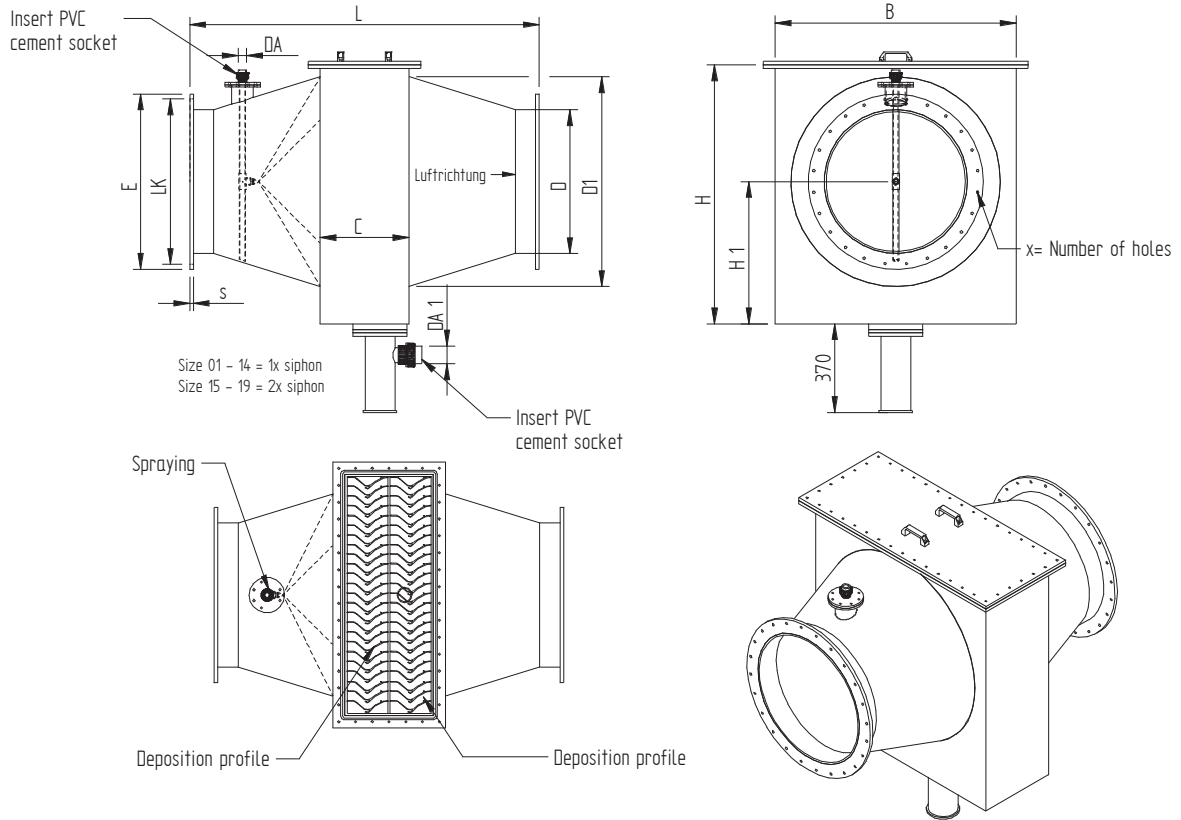
Gr. 1 - 8 Transition round / round; incl. 2 x Flat seal loose

Gr. 9 - 19 Transition round / angularly; with 2 x O-ring seal per flange

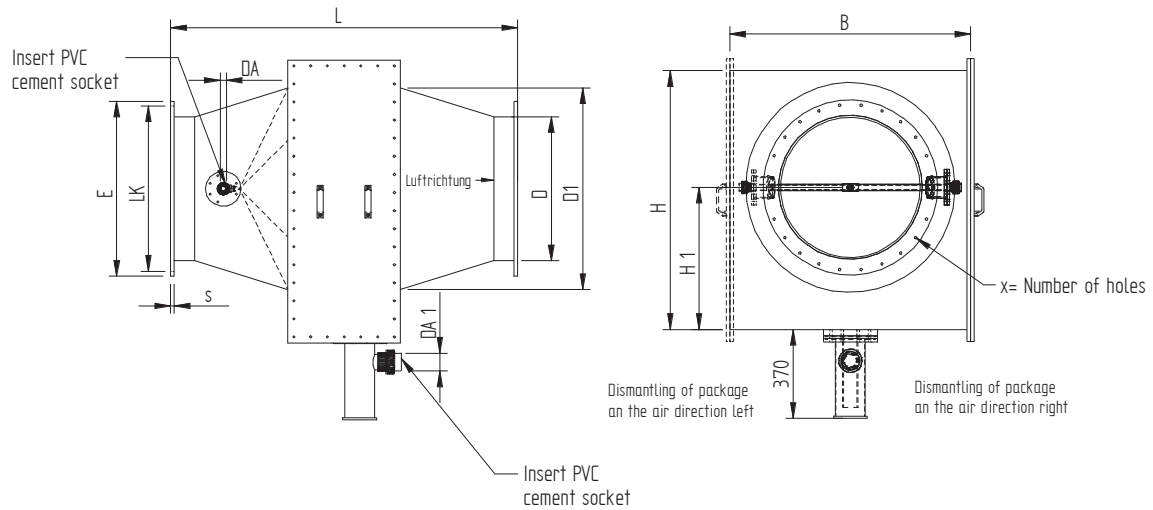
Pressure difference droplet separator type TA
"Note: Perfused cross-sectional area at TA < TAD for the same size"



Dismantling of Package upside



Dismantling of Package laterally



Inertia droplet separator with demister used to separate liquids from gas flows



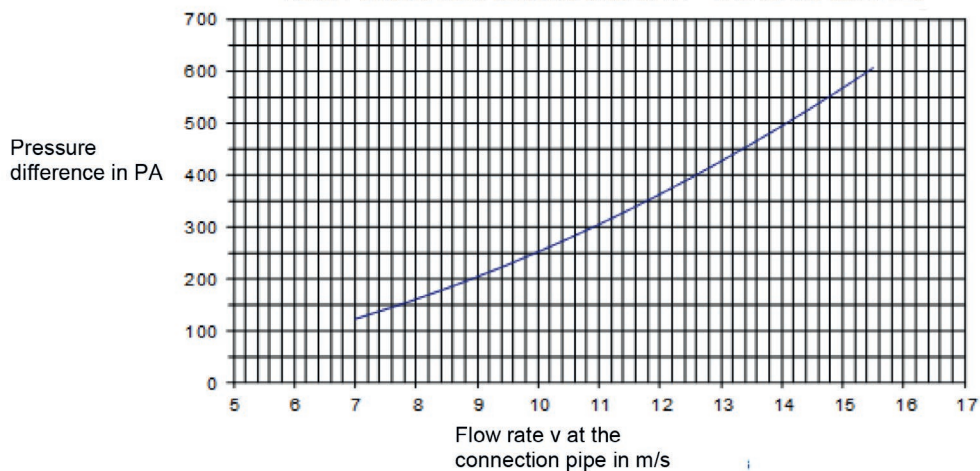
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Gr. 1 - 8 Transition round / round; incl. 2 x Flat seal loose

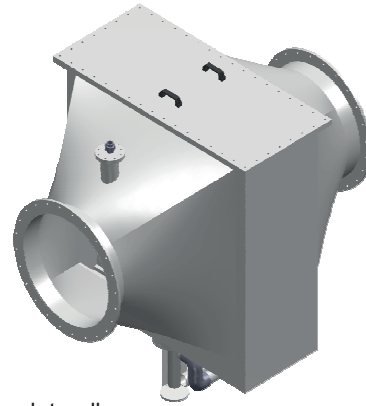
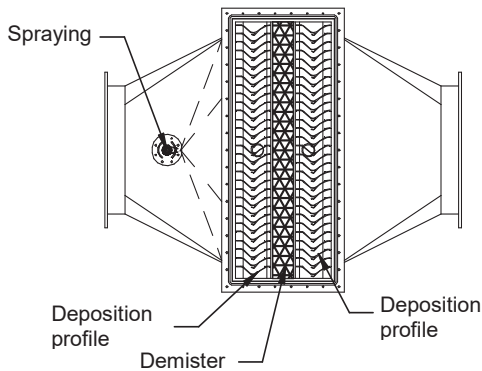
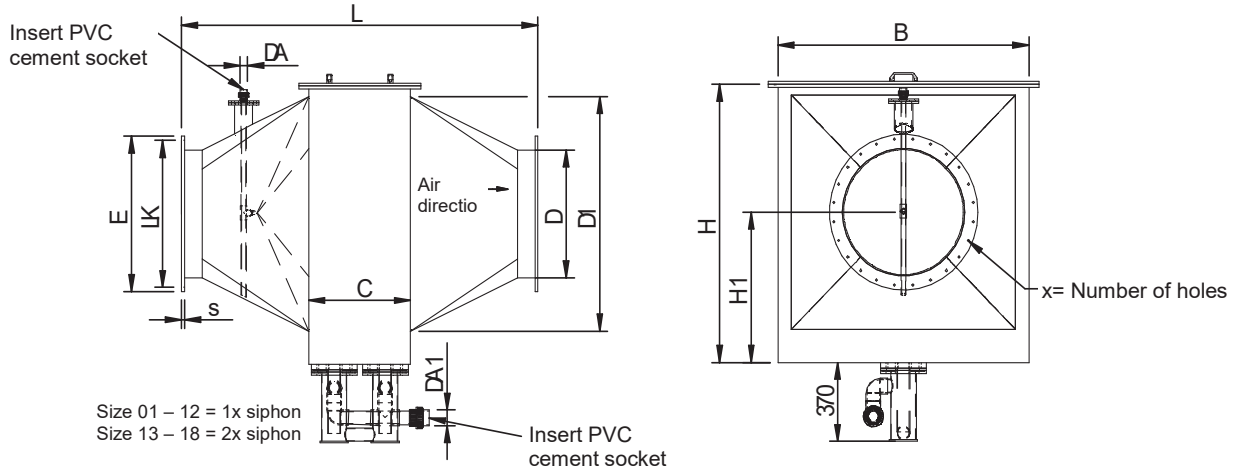
Gr. 9 - 18 Transition round / angularly; with 2 x O-ring seal per flange

Pressure difference droplet separator type TAD

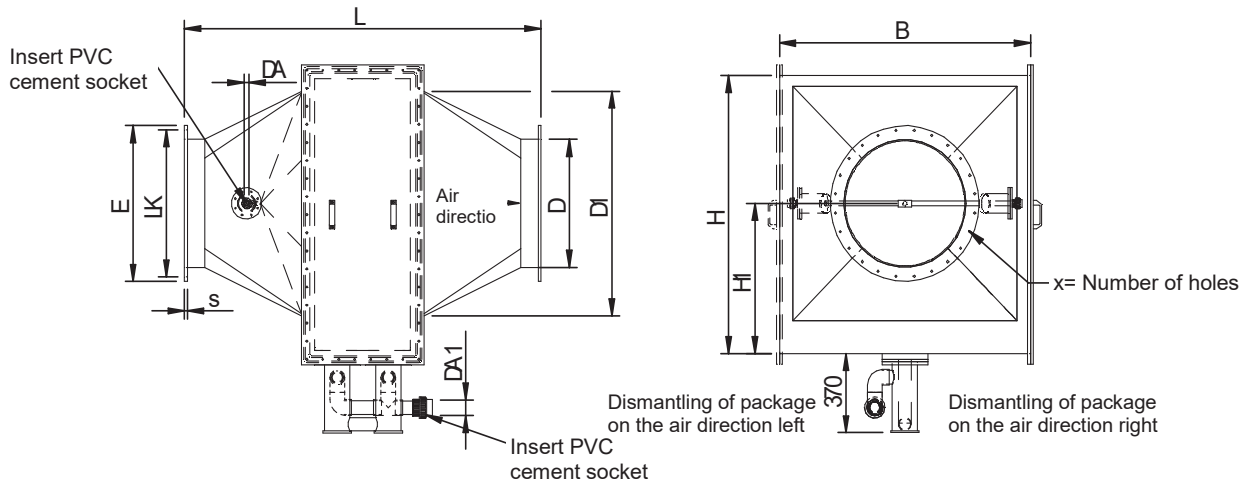
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Dismantling of package upside



Dismantling of package laterally





Hürner Luft- und Umwelttechnik

www.hlu.eu

Hürner Luft- und Umwelttechnik GmbH
Ernst-Hürner-Straße
35325 Mücke-Atzenhain
Germany

Tel + 49 6401 9180 - 0
Fax + 49 6401 9180 - 142

info@hlu.eu

HLU Systemtechnik GmbH
Sälzerstraße 20a
56235 Ransbach-Baumbach
Germany

Tel + 49 2623 92 95 9 - 0
Fax + 49 2623 92 95 9 - 99

systemtechnik@hlu.eu

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