

Hydraulic Seperator

SHW

flow-optimized

unitec



Background

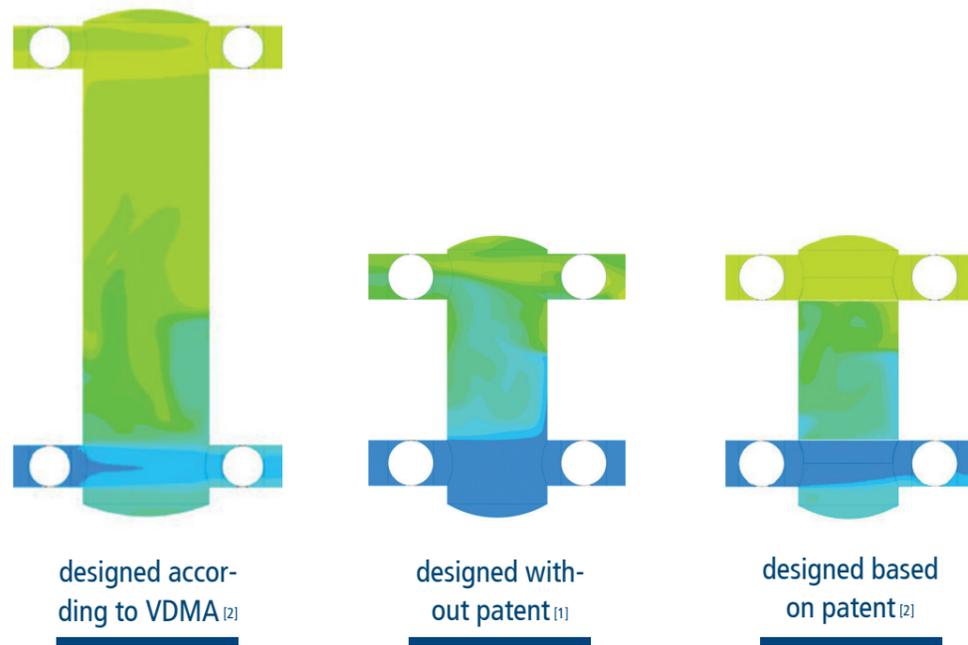
Hydraulic separators decouple generator and consumption circuits.

The Association of German Machinery and Equipment Constructors (VDMA) offers

information in their guideline 24770 specifying the ratio of tube diameter to tank diameter and tank size.

In addition, the design of hydraulic separators must con-

sider local space as well as construction and subsequent costs. The trade-off between function and cost initiated a research project at the Technical University of Chemnitz.



Separator	Key numbers				Evaluation			
	tube diameters	ø mm	height mm	content Liter	ø	height	content	performance
VDMA	DN500	1500	6350	10500	↓	↓	↓	↑
with Patent	DN500	1100	3200	2800	↑	↑	↑	↓
without Pat.	DN500	1100	3200	2800	↑	↑	↑	↑

Too small hydraulic separators show significance turbulence[1]. Therefore, the requirement of a secure supply of the planned target temperature cannot be fulfilled.

An insufficient Delta T leads to inefficient operation, increased

number of boiler starts and shorter life expectancy of the generator. In order to optimize the flow within the separator, the TU Chemnitz developed an patented a new component. [2] Consequently, the dimensions of the hydraulic separator can

be reduced significantly. In summary, cost savings considering installation and technical room can be realized with scientifically proven operation. Therefore, the trade-off between function and cost is solved. [2]

Characteristics

An outline of the flow-optimized hydraulic switches with aligned tube diameter, tank diameter and tank size as

well as the flow rate is shown at the table below. The device can be designed for both heat and refrigeration. Moreover

unitec offers the possibility to implement individual requirements such as increased tank volume.

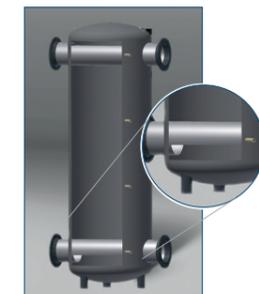


SHW
with aluminium shell



SHW
with polyester fleece

Tube diameters	ø mm	flow rate m³/h	Height mm
DN150	500	70	1400
DN200	650	125	1750
DN250	700	200	1970
DN300	790	280	2190
DN400	1000	440	2920
DN500	1100	690	3200
DN600	1300	900	3850



Detail:
patented Solution

Patent Hydraulische Weiche

DE 10 2010 061 165.4

Patentee:

TU Chemnitz

Licensee:

unitec Energietechnik GmbH

Literatur

[1] Urbaneck, T.; Platzer, B.; Göschel, Th.; Zimmermann, D.; Sander-Seidel, K.: Untersuchung einer hydraulischen Weiche in einem Fernkältesystem. HLH Bd. 65 (2014) Nr. 7-8, S. 31-35.

[2] Sander-Seidel, K.; Urbaneck, T.; Platzer, B.; Uhlig, U.: Strömungstechnische Optimierung von hydraulischen Weichen. HLH Bd. 65 (2014) Nr. 9, S. 30-33.



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