

HUBER Sandfilter CONTIFLOW®



High-performance process technology for the efficient treatment of different waters and wastewaters

- Ideal for large flow applications
- Modular design for high flexibility
- Low operating costs due to low-maintenance plants

►► The challenge – Our solution

In the past years, effluent quality requirements have significantly increased both for direct and indirect discharge due to more stringent laws and regulations.

To ensure the required effluent standards are reliably met also in the future, HUBER offers wastewater treatment plant operators its HUBER Sandfilter CONTIFLOW® as a cost-efficient, high-performance and low-maintenance system which combines the high HUBER quality standard with a well proven filter technology.

Moreover, customers who buy a HUBER Sandfilter CONTIFLOW® get a cost-effective and energy-saving product that is suitable to be used in a variety of different fields of application.

Due to its versatility the system is furthermore suitable to be used for a variety of specific process solutions.

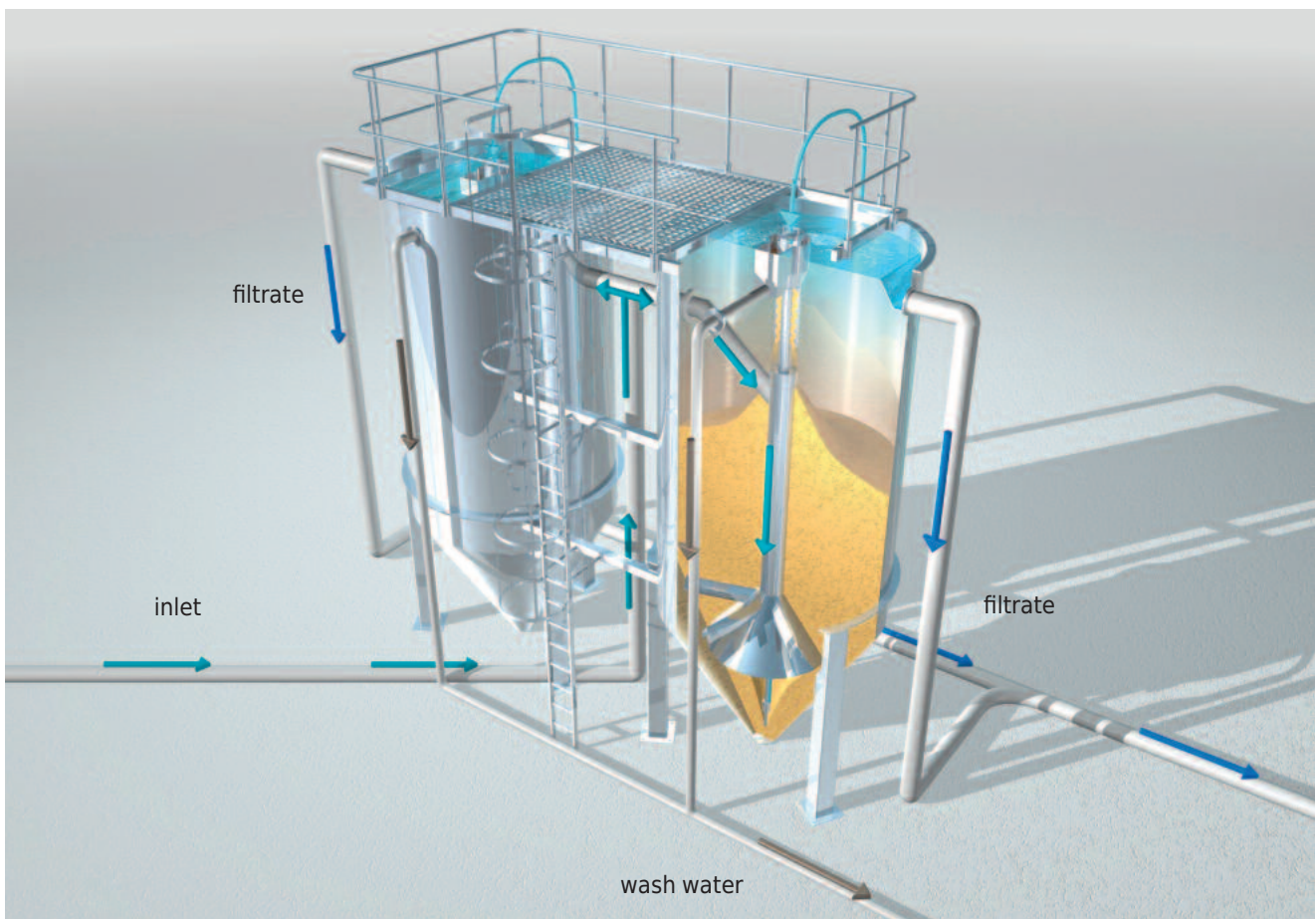
►► Functional description

The HUBER Sandfilter CONTIFLOW® is a deep-bed type upflow filter with continuous filter bed cleaning and meets even the highest effluent quality requirements. The system is highly efficient as no shutdowns for backwash cycles are necessary for the sand washing process.

The HUBER Sandfilter CONTIFLOW® is available as a steel tank design or concrete basin design. Its modular design ensures the optimal treatment of any throughput.

The feed is introduced into the Sandfilter through a series of feed radials at the bottom of the filter. As the influent flows from the bottom upward through the sand bed, the solids contained within the influent are retained in the filter sand. The filtrate exits over a weir at the top of the filter.

The sand bed, along with the accumulated solids, is drawn downward to the trough bottom into the airlift pipe, which is located in the centre of the filter. The airlift transports the mix upwards to the sand washer. Inside the washer, the solids are separated from the filter sand with a small portion of the filtrate flow. The clean sand falls down through to the bed, generating an internal sand circulation.



Flow diagram of a HUBER Sandfilter CONTIFLOW®

➤ Applications

The HUBER Sandfilter CONTIFLOW® provides users with an optimal solution for the continuous treatment of many different types of water and wastewater.

Typical fields of application of HUBER Sandfilter CONTIFLOW® units:

- Advanced municipal and industrial wastewater treatment
- Treatment of process water, cooling water and circulation water
- Treatment of surface waters and removal of algae
- Removal of turbidities and reduction of nutrients
- Recovery of products and recyclables
- Fourth treatment stage in combination with ozone and downstream active carbon filtration

The HUBER Sandfilter CONTIFLOW® is typically used as last step of the wastewater treatment process, its purpose in this application is primarily separation of turbidities.

Iron and manganese can be carried over into the solid phase by preceding treatment stages and also separated by filtration.

The Sandfilter is also used as a reactor for nutrient reduction:

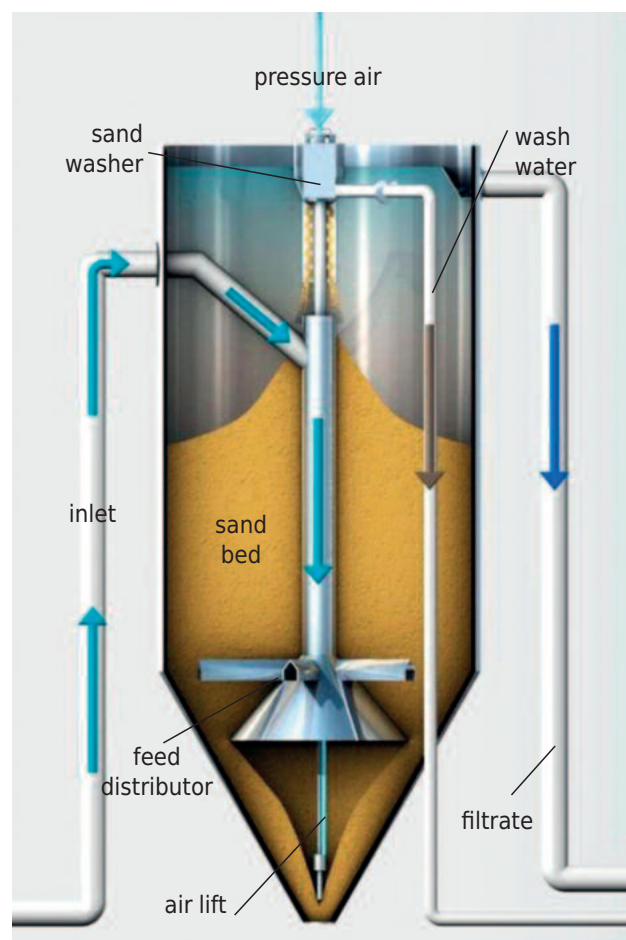
- Chemical phosphorus elimination through precipitation: In combination with a physical-chemical treatment stage (precipitation/flocculation) dissolved phosphorus compounds, such as orthophosphate, are converted into undissolved phosphates which are retained in the sand bed together with the filterable solids and discharged along with the wash water.
- Nitrogen reduction through denitrification: Through subsequent biological denitrification in the Sandfilter the nitrates contained within the inflow are converted into gaseous nitrogen due to the growth of biomass on the surfaces of the sand grains.

Numerous measurements have shown that the HUBER Sandfilter CONTIFLOW® significantly reduces the number of germs.

In case of increased disinfection requirements, installation of a subsequent disinfection system is possible due to the low concentration of solids in the filtrate.



HUBER Sandfilter CONTIFLOW® 51, Montmartin, France



Design and function of the HUBER Sandfilter CONTIFLOW®

➤ The user's benefits

- Flexible and cost-effective system for the efficient treatment of water and wastewater
- Modular design for easy adaptation to any flow rate
- Continuous filtration saves operating and investment costs
- Continuous or optionally discontinuous sand cleaning without shutdowns
- No need for wash water tanks, wash pumps and complicated backwashing systems
- Optimum efficiency due to the use of filtrate as wash water
- Gravity feed without pumps
- No moving parts and only one wearing part for easy maintenance
- High operating reliability due to constantly high filtrate quality even under sudden peak loads
- Available in a stainless steel tank or optionally in a concrete tank
- Versatile system, sturdy design, well proven over many years



HUBER Sandfilter CONTIFLOW® C , Wolfratshausen, Germany



HUBER Sandfilter CONTIFLOW® 72, Montebello, Italy



HUBER Sandfilter CONTIFLOW® C, Rincon de Leon, Spain



HUBER Sandfilter CONTIFLOW® C, Salzweg, Germany

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