



HUBER Disc Filter RoDisc®

- ▶ Retention of suspended solids from the secondary clarifier effluent
- ▶ Process water treatment for industrial applications
- ▶ Preliminary filtration in drinking water generation from surface waters and in UV disinfection applications

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Function

High hydraulic loads, insufficient tank depth and poor settling properties are the most common causes for the insufficient secondary clarifier performance. It may even reach the stage where the minimum requirements for a reliable solids retention can no longer be complied with. Overflow of flocks increases COD, BOD and phosphorus loads in the effluent and receiving watercourse with the result of higher wastewater fees.

Downstream micro screening offers an efficient and quickly implementable option for separating fine suspended materials. This reduces the load on receiving waters.

Design and function

The HUBER Disc Filter RoDisc® is a gravity-flow filtration system. For this purpose, the water is initially fed to the horizontal shaft and flows from there through openings into the disc-shaped screen elements. The wastewater to be treated flows through the discs from inside to outside. The discs initially remain in rest position during micro screening. The solids are retained on the inner disc surfaces, which leads to gradual blinding of the mesh, resulting in an increasing pressure differential. An overflow weir ensure that the water level in the tank remains virtually constant. The upstream water level rises as the blinding process progresses. Cleaning of the screen elements starts automatically once a defined water level has been reached.

The screen mesh is cleaned by nozzle strips. In the opposite direction to the filtration flow, i.e. from the outside to the inside, the fabric is cleaned by the high-pressure water jet while the discs are rotating slowly. The filtrate in the machine's tank is used for back-washing, which means that no fresh water is required. The spray water and the solids contained are collected in a trough and discharged axially from the machine. Solids separation is not interrupted during cleaning.

Solution

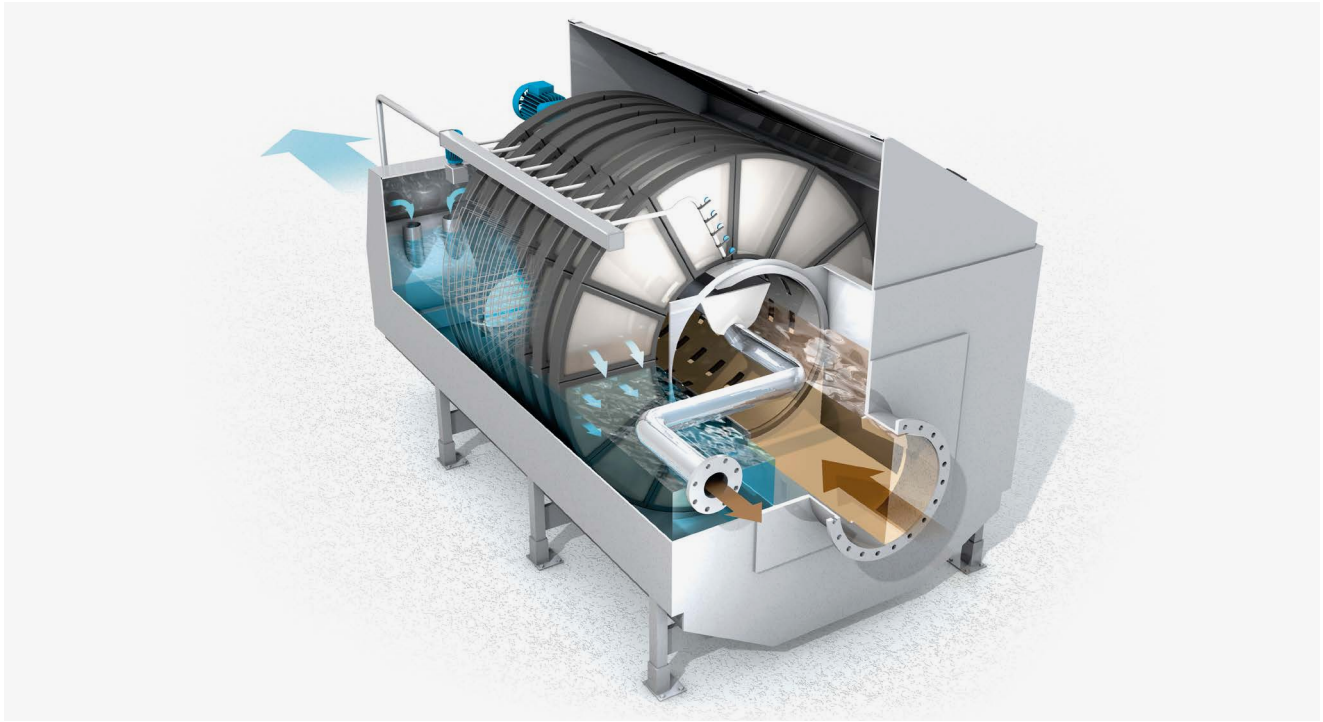
The HUBER Disc Filter RoDisc® is a micro screening system. The machine consists of vertically arranged discs connected by a horizontal shaft. Up to 65 % of the disc surface is submerged.

Each disc consists of 12 segments. The segments are covered on both sides with mesh fabric, which has been fixed around the edges. Each segment can be replaced individually.

Due to its small space requirement and modular design the RoDisc® can be tailored to suit any specific site requirements.



The modular design of a RoDisc® filter disc



Applications

Filtration of biologically treated wastewater

The HUBER Disc Filter RoDisc® is frequently used for the separation of fine suspended material from biologically treated wastewater within municipal and industrial applications. This is particularly the case if secondary clarification is not working well, e.g. because secondary clarification tanks are too small or the activated sludge is difficult to settle.

RoDisc use in the drinking water sector

Especially in the drinking water sector, machine technology is subject to particularly high demands. The highest quality standards for the materials used and traceability of the supply chains are essential here. Cleanliness and hygiene must be ensured throughout drinking water applications, from manufacturing of the machine technology to commissioning.

Drinking water can be obtained from surface water, springs or shore filtrate water. The key task here is to remove mussels, their larvae, algae or the very fine sludge from the water. For this purpose, HUBER provides a reliable product solution with the RoDisc®.

Filtration to protect or increase the effectiveness of downstream cleaning procedures

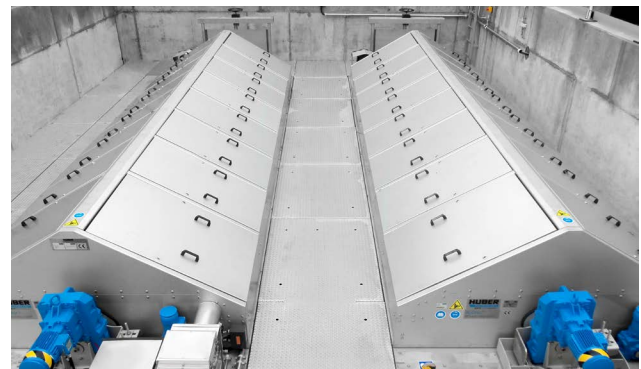
A virtually solids-free flow is a prerequisite for effective and efficient as well as trouble and maintenance free operation of some subsequent treatment steps, such as UV disinfection, GAC filtration and membrane filtration. Our micro screens significantly reduce the concentration of suspended material.

Treatment of water and wastewater in industries

Advanced wastewater treatment at source is required due to more stringent legislation concerning direct or indirect wastewater discharge. Wastewater recycling also requires the removal of solids. Service and process water must be as free of solids as possible.

Special use cases include:

- ▶ Wastewater within paper and pulp industry
- ▶ Wastewater within plastic processing industries
- ▶ Treatment of service and process water, closing water loops (e.g. in food and chemical industry)
- ▶ Removal of microplastics



Two-line RoDisc® installation for solids separation.

The user's benefits

- ▶ Very high hydraulic capacity on a small footprint
- ▶ Gravity system with low head loss, no lifting of wastewater required
- ▶ Significant reduction of filterable solids and thus COD, BOD and phosphorus
- ▶ No external water supply required as filtrate is used for cleaning
- ▶ Continuous micro screening even during backwashing
- ▶ Easy individual filter element replacement without the need for lifting equipment



28 HUBER Disc Filter RoDisc® units with 24 discs each treating about 8.5 m³ wastewater per second.

Technical data

- ▶ Different filter disc diameters available
- ▶ Throughput up to 2,200 m³/h per machine
- ▶ Up to 35 filter discs per machine
- ▶ Mesh sizes of approx. 10 –100 µm possible
- ▶ Fabric quality: PET, stainless steel



4 HUBER Disc Filter RoDisc® with 18 discs in stainless steel container.



Backwashing of filter discs with filtrate – no external wash water required.

HUBER SE

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