HUBER TECHNOLOGY
WASTE WATER Solutions

HUBER Drum Screen LIQUID

Reliable fine screening with maximum separation efficiency

– Maximum retention of fibres and hair
– Operating reliability for membrane bioreactors
– Maximum COD / BOD_5 reduction rates

The situation

Mechanical pretreatment is required for both municipal and industrial wastewater in order to remove coarse materials and separate floating, settling and suspended solids.

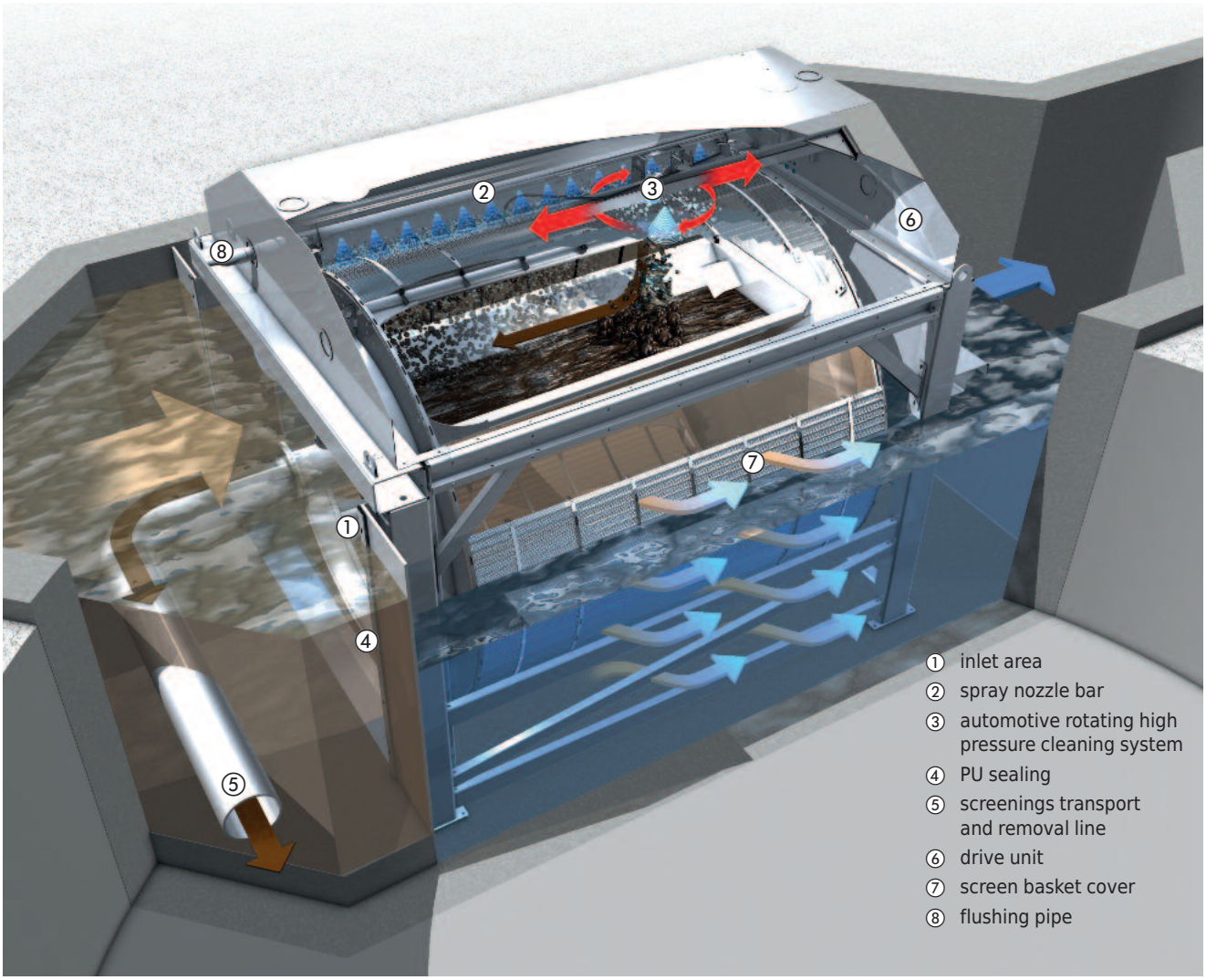
Depending on the method of wastewater treatment that is applied the mechanical pretreatment system must fulfil different requirements in terms of separation efficiency. Special plants which operate according to the MBR principle put the highest demands on the mechanical pretreatment system as all coarse material needs to be removed.

A cost-efficient solution must not only achieve the requested separation results, it must also provide high throughput capacities combined with maximum operating reliability.

Our solution: HUBER Drum Screen LIQUID

The HUBER Drum Screen LIQUID is available in different designs and suitable for numerous applications of solids-liquid separation.

Depending on the specific application requirements the horizontal drum is covered with a mesh, wedge wire or perforated plate.



HUBER Drum Screen LIQUID for channel installation

Design and function

The characteristic feature of the HUBER Drum Screen LIQUID is its screen basket which is horizontally installed in the channel or in a tank. The wastewater to be treated flows through the basket from inside to outside. Whilst the wastewater flows through the open front into the screen basket, solids are retained within the drum. A special sealing between the channel and the front-end screen basket opening prevents unscreened wastewater from passing through the screen basket. The solids settling on the drum surface lead to gradual blinding of the surface. As a result, the water level upstream of the screen rises. When the predefined maximum water level has been reached, the screen basket starts to rotate around its axis to clean its surface. At its crown a spray nozzle bar sprays water onto the drum surface from outside to remove the solids and flush them into a trough inside the drum basket from where the screenings are discharged by gravity. The screenings can optionally be pumped to a higher level.

The HUBER Wash Press WAP® liquid (see separate brochure) is available for further treatment of the separated screenings. The wash press dewaters the screenings prior to discharging them into a container.

Technical data

- 4 sizes for throughput capacities up to 10,000 m³/h wastewater
- drum diameter 2.2 m
- drum length up to 4 m
- perforated plate from 1.5 up to 3 mm
- STAR design perforations 1 – 2 mm
- mesh sizes from 0.2 up to 0.75 mm
- bar spacings from 0.5 up to 3 mm
- for channel or tank installation
- completely made of stainless steel and acid-treated in a pickling bath for maximum corrosion resistance

A tailored solution to suit any application

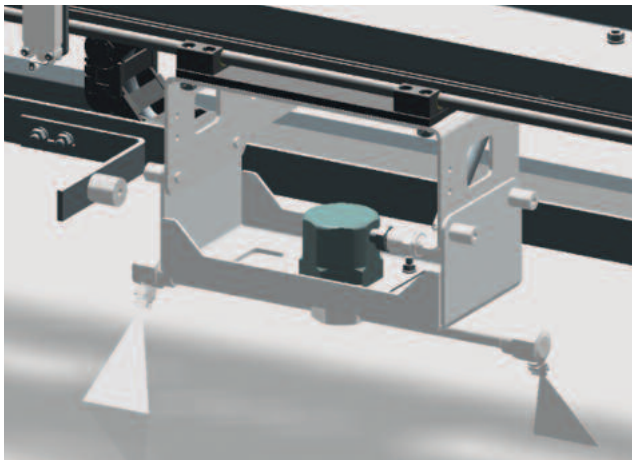
- industrial and municipal applications
- primary and secondary treatment stage
- protection of membrane plants
- replacement for primary settlement tank
- load reduction in the biological treatment system through reduction of COD / BOD/ AFS
- screening in the inlet to power plants
- treatment of cooling water circuits
- brewery wastewater
- river and sea outfall
- surface and river water screening

The benefits are obvious

- high throughput capacity – maximum separation efficiency
- easy maintenance
- low operation costs
- low life-cycle costs
- optional high pressure cleaning reduces maintenance requirements
- for channel or tank installation
- various possible applications
- maximum corrosion protection through stainless steel design and acid treatment in a pickling bath

High pressure cleaning

For preventive basket cleaning an innovative automatic high pressure system can be integrated as an option. The spray nozzle head rotates automatically due to the water pressure and moves linearly along the full length of the screen basket to clean the complete basket thoroughly and efficiently. Water demand and operator attendance are reduced to a minimum.



Automatic high pressure cleaning system of the HUBER Drum Screen LIQUID

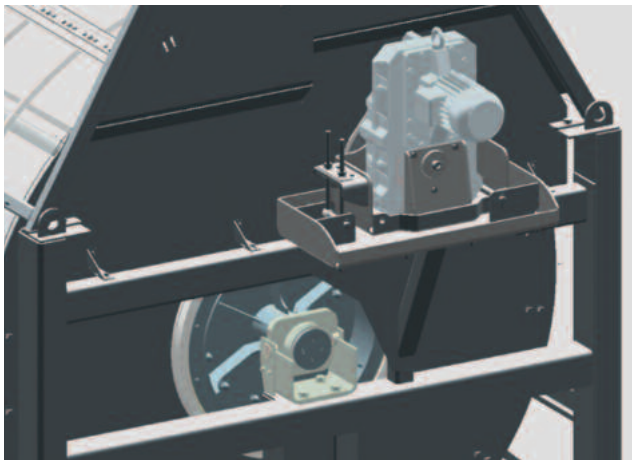
Reliable sealing

Every system is only as good as its sealing system in the inlet of the machine. A special PU sealing is therefore integrated in the HUBER Drum Screen LIQUID to ensure that no unscreened wastewater can pass through the screen and constant separation results are reliably met.

Polyurethane sealing in the inlet of the HUBER Drum Screen LIQUID

Low-maintenance chain drive

The HUBER Drum Screen LIQUID is equipped with a unique self-adjusting bearing unit with a chain drive. The bearing is water-lubricated and made of highly wear-resistant fibre composite material. The bearing can be replaced without dismounting the machine.



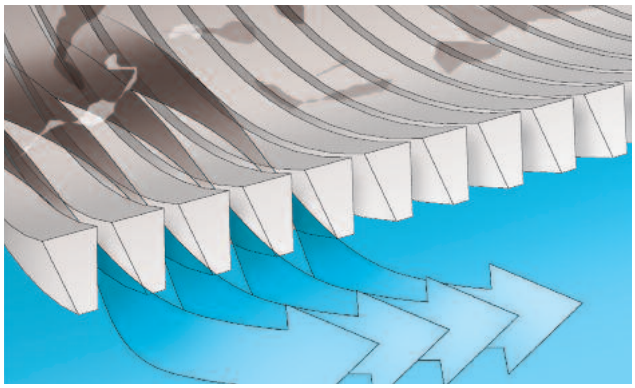
Low-maintenance chain drive on the HUBER Drum Screen LIQUID

Drum Screen LIQUID ww

HUBER Drum Screen LIQUID with wedge wire drum,
wedge wire sizes 0.5 / 1 / 2 / 3 mm.

Solids retention with high throughput capacities of up to 10,000 m³/h per machine.

Typical applications:
Mechanical pretreatment on sewage treatment plants, industrial solids-liquid separation



Wedge wire for high hydraulic throughputs

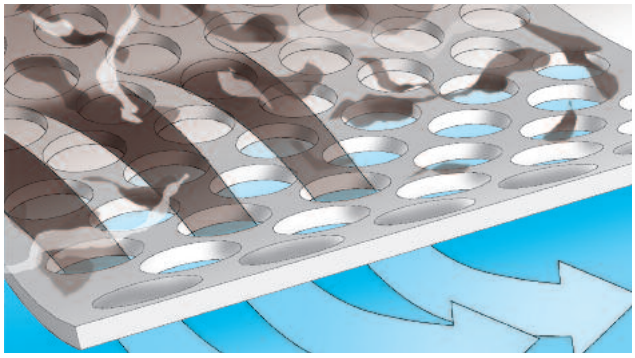
Drum Screen LIQUID pp

HUBER Drum Screen LIQUID with perforated plate,
perforations 1.5 / 1 / 2 / 3 mm.

High separation efficiency and retention of fibres and hair.

Typical applications for 1 and 2 mm perforation:
Protection of hollow-fibre membrane filtration plants

Typical applications 3 mm perforation:
Protection of plate membrane filtration plants



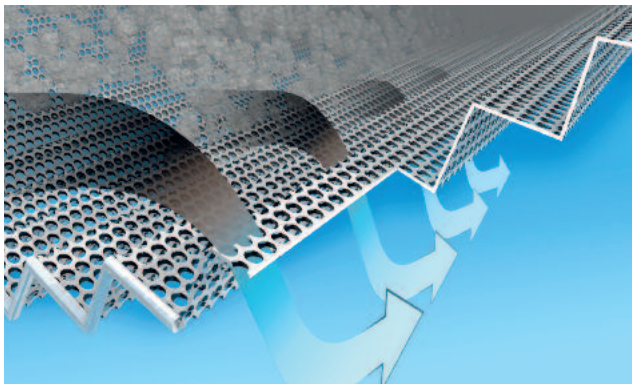
Perforated plate for high separation efficiency and at the same time high hydraulic capacity

Drum Screen LIQUID star

HUBER Drum Screen LIQUID with folded perforated plate,
perforations 1 / 1 / 1.5 / 2 mm.

Increased screen surface for higher throughputs.
High separation efficiency and retention of fibres and hair.

Typical applications:
Protection of membrane filtration plants



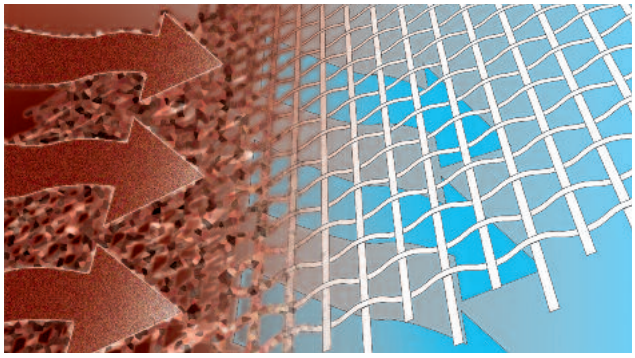
Folded perforated plate STAR with increased screen surface

Drum Screen LIQUID mesh

HUBER Drum Screen LIQUID with mesh,
mesh sizes from 0.2 up to 0.75 mm.

Maximum separation efficiency and reduction of COD and BOD by 20 – 40%.

Typical applications:
Load reduction in the preliminary treatment stage
Replacement for primary settlement tank
Sea and river outfall applications



Mesh for maximum separation requirements

Application example: load reduction in the biological treatment stage

Due to its excellent separation efficiency the HUBER Drum Screen LIQUID mesh is very well suited to be used to reduce the solids loads in the biological treatment stage. A HUBER Drum Screen LIQUID mesh with 0.3 mm mesh size for example achieves reduction rates of up to 60% for filterable solids (AFS) and up to 40% for chemical oxygen demand (COD). Peak loads can thus be balanced, aeration energy in the aerobic treatment stage can be saved and the capacity of the sewage treatment plant increased. Moreover, the screenings separated by the HUBER Drum Screen LIQUID can be passed to the digester to increase biogas production.

Another application of the HUBER Drum Screen LIQUID mesh is its installation as replacement of the primary settlement tank. Due to its low space requirements and low hydraulic loss the HUBER Drum Screen LIQUID is also very well suited to be used to upgrade and modernize existing sewage treatment plants.

HUBER Drum Screen LIQUID for maximum separation efficiency and at the same time low pressure losses

Screenings separated by the HUBER Drum Screen LIQUID mesh: The load to be handled in the biological treatment stage is reduced and more gas can be produced in the digester.

HUBER SE

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