



HUBER **Band Screen DiscMax®**

Fish-friendly fine screen for water intake stations

- ▶ Compact design for significant savings in construction costs
- ▶ Best possible fish protection according to US standard EPA 316(b) Act
- ▶ Quick installation and commissioning due to pre-assembly and self-supporting frame
- ▶ Extremely maintenance-friendly operation with low operating costs

Optimising the operation and costs of water intake stations with innovative band screens

Plant operators need robust fine screening machines that effectively protect pumps and membranes from dirt particles being carried over to the clean water side. The decisive factor here is to optimise the flow behaviour of the water in the sewer as far as possible.

Too much turbulence results in unfavourable pump inflow and must be avoided. The more laminar flows occur, the longer the distance between the fine screen and the pump must be. This results in considerable structure lengths, which on the one hand lead to increased construction costs for water extraction projects and on the other hand present planners with major challenges in implementing projects where space is limited. In addition, the classic fine screen systems, through which water flows from the inside to the outside or from the outside to the inside, require a complex design of the structure, which also contributes to increased construction costs.

With this in mind, HUBER has developed the high-performance DiscMax® band screen. Its compact, robust design makes the screen an ideal solution for the new construction and modernisation of water intake stations. On-site cost saving potentials for the customer can be exploited, which contributes to an overall higher economic efficiency of the plant.

Design and function

The HUBER Band Screen DiscMax® is a direct-flow screen with crescent-shaped screen elements. Depending on the requirement profile, the screening elements can be supplied in mesh or perforated plate design with different separation sizes.

The screening elements are connected to a chain and powered by a drive motor. The chain is guided by a guide track in the lower area and a chain wheel in the upper area of the machine. During operation, dirt particles settle on the screening element.

They are conveyed upwards by the movement of the screening elements and removed from them by a spray nozzle system arranged behind the screening elements and sprayed into a launder. Coarser dirt particles that do not adhere to the screening elements are also conveyed upwards by carrier bars on the screening element.

To improve its corrosion properties, the screen can be optimised for salt water applications through the choice of material or the selection of suitable corrosion protection systems.

The compact design of a HUBER Band Screen DiscMax® with its central drive chain and self-supporting support frame ensures safe operation with low maintenance costs, thus optimising operating costs.

In addition, the special design enables particularly fish-friendly operation during water extraction.



Schematic diagram of a HUBER Band Screen DiscMax®.

Fields of application of the HUBER Band Screen DiscMax®

The HUBER Band Screen DiscMax® is used as a fine screen for the treatment of river, lake and sea water in the following applications, among others:



Use as cooling water in thermal power plants.



Process and cooling water in chemical plants and refineries.



Process and cooling water in the paper industry and other industries.



Raw water for drinking water supply.



Raw water for seawater desalination.



Use for irrigation in agriculture.

Sizes and process engineering data

- ▶ Machine material selection possible from low-alloy stainless steels to super duplex
- ▶ Channel widths up to 3.5 m
- ▶ Channel depth up to 25 m
- ▶ Installation angle of 90°
- ▶ Separation size 1 – 10 mm
- ▶ Available with perforated plate or mesh element
- ▶ Flow rates of up to 50,000 m³/h per channel
- ▶ Optional design with fish buckets

Advantages of the HUBER Band Screen DiscMax®

- ▶ Savings in construction costs through more compact channel structures due to the low-turbulence design of the machine
- ▶ Installation and assembly – quick and easy installation of the machine in the structure
- ▶ Zero Carry Over – no carry-over of dirt particles to the clean water side to increase the operational reliability of subsequent process steps
- ▶ Fish-friendly solution – optionally available with a fish return system based on the recommendations of the EPA 316b standard
- ▶ Easy maintenance – all maintenance steps can be carried out from the operator level
- ▶ Low-wear solution – all moving parts are located on the clean water side
- ▶ Variable speed of operation to optimise the running times and discharge capacities of the machine
- ▶ Machine design – high robustness and low-maintenance operation
- ▶ Hydraulic advantages – the flow passes through the screen surface only once
- ▶ Simplified design and compactness of the machine reduces noise emissions.

Optimum fish protection with the HUBER Band Screen DiscMax®

To protect aquatic life, the machine can optionally be equipped with a fish return system based on the recommendations of the US EPA CWA 316b standard and the EU Habitats Directive.

In this system, the fish swimming towards the HUBER Band Screen DiscMax® are carefully scooped out by buckets attached to the screening elements of the

machine. The buckets are made of a special plastic material to ensure gentle transport of the fish in the water.

The fish are then carefully transported with the water into a separate launder and returned to the water body.



Sustainable water extraction takes into account the protection of aquatic life.