Band Screens

Travelling Band Screens for Sea Water Desalination Intake

Band screen, travelling band screen, traveling water screen, seawater intake screen, SWRO intake screen, desalination band screen



Description

The Rockerhill band screen is a continuous, self-cleaning mechanical filtration device used mainly at the intake stage of sea water desalination plants. A series of screen panels is joined into a continuous band that rotates vertically between a drive mechanism at the top and a tail mechanism at the bottom. As seawater flows through, the rotating panels trap and lift suspended solids such as seaweed, jellyfish, fish and other debris.

Each screen is designed and manufactured to the application and special requirements of the client. Our patented band screen design for desalination is widely applied in developed countries including the USA, Australia, Spain and South Korea.

Continuous operation

Self-cleaning keeps screening and debris removal going without interrupting the intake flow, which a desalination plant depends on.

Efficient in marine environments

Handles large water volumes and the diverse, often delicate, biological matter in seawater intakes, such as algae and jellyfish.

Protects downstream equipment

Removing larger debris prevents blockage and damage to cartridge filters, high-pressure pumps and RO membranes, cutting maintenance cost and downtime.

Adaptable

Designed for a wide range of flow rates and debris loads, for intake designs from coastal to subsurface.

Structural features

Built to endure corrosive seawater and continuous mechanical stress.

Corrosion-resistant materials

Critical components in super duplex 2507 / 2205 and titanium, non-metallic composites such as FRP, and seawater-resistant polymers such as UHMW-PE for wear strips and sprockets.

Screen panels

Stainless steel mesh or perforated plate, with aperture sizes from 1 mm to 10 mm to suit the water quality.

Cleaning spray system

High-pressure seawater or freshwater nozzles at the discharge point wash collected debris from the panels into the debris trough.

Robust frame and guide system

A heavy-duty frame with precision guides and wear strips keeps the band tracking correctly and limits friction and wear.

Application

Intake screening. The band screen is the first line of mechanical defense at the plant intake. It removes gross solids from the raw seawater before the water enters pretreatment, which may include finer screening, degasification and filtration.

Technical considerations

Points we review with each client when selecting and sizing a band screen.

Screen aperture

Balances effective debris removal against faster blinding and higher head loss.

Approach velocity

Must be controlled. Too high a velocity pushes debris through the screen or stops it being captured.

Head loss

The level difference across the screen is monitored. Excessive head loss indicates blinding, and cleaning is often triggered at a preset value.

Corrosion protection

Material selection of all wetted and structural parts is paramount. Electropolishing of stainless steel and non-corrosive composites are common practice.

Debris handling

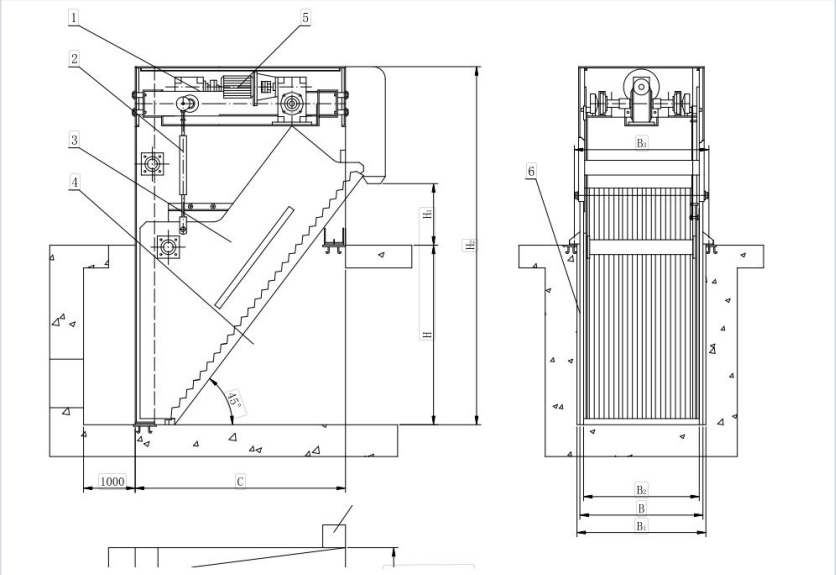
An efficient system to collect, dewater where necessary, and dispose of screenings responsibly.

Summary

Acting as the primary guardian of the desalination system, the Rockerhill band screen keeps seawater flowing by automatically and continuously removing large suspended solids. Its corrosion-resistant construction and reliable self-cleaning mechanism suit the demanding marine environment.

Design and fabrication

Typical arrangement drawing at 45 degrees (left) and installed units on site (right).





Global project experience

Engineered water-control and screening equipment, designed, fabricated, tested and shipped by Rockerhill to the standards of each market.

No.	Country / region	Project	Equipment and key data
1	**Mexico**	Aquatech project: cooling water intake screen	Traveling water screen for cooling water intake
2	**Middle East**	SWRO seawater intake	Traveling band screen, 4,000 m^3/h SWRO
3	**Singapore**	Public utility project: manual bar screens	4 sets, SS316L, frame 3,518 x 1,830 mm, bars 40 x 10 mm
4	**China**	Water treatment plants: travelling band screens	5 projects, 12 sets, 2022 – 2026 (see references)
5	**Australia**	Fish gate project	Multiple gates, fabricated to project drawings
6	**Canada**	Carbon capture process skid	ASME process skid, factory acceptance tested
7	**USA**	Hydrogen peroxide production skid	Low-concentration H_2O_2 skid built to US code requirements
8	**Croatia**	Water-control equipment	*Details to be supplied*

Send us your intake data

Flow rate, channel width and depth, water level range, debris type, aperture and material requirements. We will return a technical proposal and quotation.

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Travelling band screen references

Selected project references for the supply of travelling band screens to water treatment facilities.

5
referenced projects

12 sets
total equipment supplied

2022 – 2026
factory date range

No.	Equipment	Project	Qty.	Factory date	Current status
01	Travelling Band Screen	**Shanxi Jincheng Dashuiyuan Water Treatment Plant**	2 sets	May 2022	In operation
02	Travelling Band Screen	**Hebei Shijiazhuang Nancun Water Treatment Plant**	2 sets	Nov 2025	Equipment installed; not yet commissioned
03	Travelling Band Screen	**Shenzhen Changliupi Water Treatment Plant**	4 sets	Mar 2026	Equipment installation in progress
04	Travelling Band Screen	**Zhejiang Longyou Economic Development Zone Water Treatment Plant**	2 sets	Jul 2026	Equipment installed; not yet commissioned
05	Travelling Band Screen	**Zhejiang Ningbo No. 2 Industrial Water Treatment Plant**	2 sets	Sep 2026	Equipment installation in progress