

TRAVELLING BAND SCREEN

DUAL FLOW FROM OUTSIDE TOWARDS INSIDE



ADVANTAGES

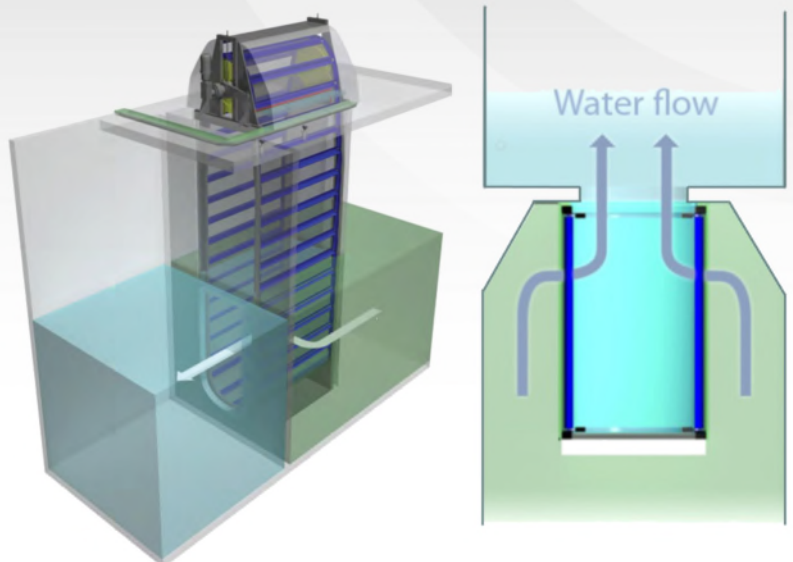
- ◆ High screening capacity
- ◆ Large screening area in a compact design
- ◆ Capable of **high speed rotation** (up to 20m/min)
- ◆ Easy and reduced maintenance compare to other screens on the market
- ◆ High seal efficiency
- ◆ **No carry-over problem** (compared to the Thru-flow band screen)
- ◆ Premium quality construction and robust design
- ◆ Over 1,350 units installed in 61 countries
- ◆ Designed to meet seismic qualifications

PURPOSE

- ◆ BEAUDREY Band Screens are typically installed in an intake screening system. They are used in thermal and nuclear power plants, LNG terminals, desalination or fertilizer plants, drinking water and irrigation plants.
- ◆ They are positioned downstream from the trash rakes or coarse bar screens and upstream of the circulating water pumps.
- ◆ Travelling screens are used to arrest the small debris contained in the water so that the downstream users remain unobstructed and clean (condensers, exchanges, spray-water circuits, membranes etc). Debris can be of all types including fish, shrimps, jellyfish, grass, man-made refuse, plastics, seaweed, etc.
- ◆ BEAUDREY travelling band screens are able to operate in a variety of water types including salt water, fresh water and brackish water. The band screens are self-cleaning and have operation modes that range from fully automatic to strictly manual.
- ◆ The Dual Flow band screen is currently the « **Best Technology Available (BTA)** » for fish protection as per EPA 316(b).

LAYOUT

- ◆ The water enters along both sides of the upstream wall-plate, flows through the upstream face of the panels on each side, where the debris are arrested. The water then flows out through the back, partition aperture.

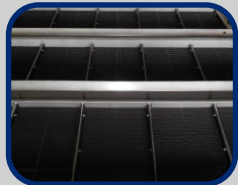


DESCRIPTION AND OPERATION

- ◆ Installed in a channel in which flows the water to be cleaned, the screen consists of a set of rectangular screening mesh panels carried by two endless chains. The panels travel up and down again between an upstream wall plate and a downstream partition with a central, outlet aperture set across the channel.
- ◆ The debris-laden panels travel up above deck level, around the top and down again. One or two spray pipes with fantail jet nozzles set on the down stream side of the panels within the screen's head structure, back-wash the panels, remove the debris which are projected into a collection trough. They travel in a deck flume to the debris disposal system (basket, separator, etc.)
- ◆ The screens are normally stopped and are washed periodically when clogged by debris. Permanent rotation can be provided.



Panels with woven mesh



Panels with Nocling™ mesh

SCREENING PANELS AND MESH

- ◆ BEAUDREY travelling band screen panels are equipped with modular **screening mesh** of two different types:
 - ◇ Stainless steel woven mesh (304L, 316L, Duplex or Super Duplex) – from 1x1mm to 4x4mm aperture
 - ◇ BEAUDREY patented Nocling™ mesh (composite) – for 5x5 and 6x6 mm aperture
- ◆ BEAUDREY's exclusive screening panel design ensures the best possible sealing between consecutive panels (horizontally) and also between panels and guide frames (on the side).

HEAD FRAME

- ◆ Beaudrey recommends using **direct coupling** for gear-reducer which is a maintenance cost saving compared to indirect transmission using chain and pinion.
- ◆ Motor is driven by a VFD for different rotation speeds (2 or 3 speeds).
- ◆ The main shaft is running on special bearings. Permanently-lubricated bushes are fitted to prevent oil or grease leakage in the environment.
- ◆ Sprocket teeth are removable. The height of the bearings and the shaft can be adjusted.
- ◆ All our travelling band screen types can be equipped with double spray pipes to increase backwashing efficiency.
- ◆ **Special fish lifting trays and Low Pressure sprays can be accommodated** for local fish and environmental regulations.



CHAINS AND STRUCTURE

- ◆ Chain design reflects the **best state of the art**. It consist in heavy duty links, bushes, pins and rollers. **Strong materials such as special steel for fresh water, Duplex or Super-duplex stainless steel for seawater applications**
- ◆ Chains guides are part of travelling band screen structure.
- ◆ Travelling band screen structure is available with full carrying structure or with rails and guides fixed to the civil works.
- ◆ A full carrying structure reduces civil works and makes travelling band screen independent of civil works potential defects.



CONSTRUCTION

INSTALLATION

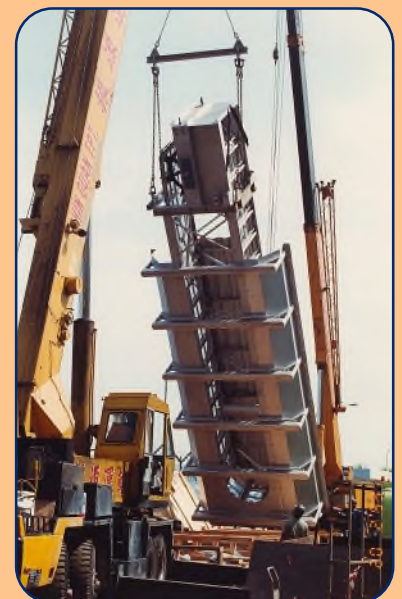
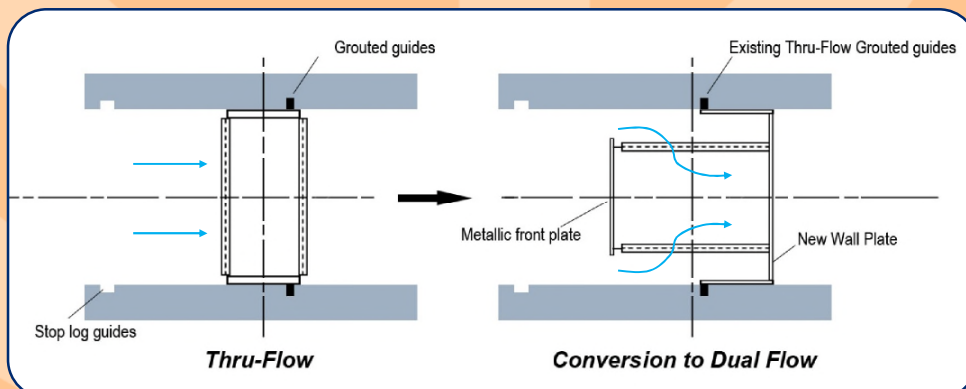
SELF-STANDING BAND SCREEN

- ◆ When the travelling band screen is designed with a full carrying structure, it can be delivered fully-assembled on site, for easy and quick installation. If the band screen size (>12m) does not allow for easy transportation, installation can take place at deck level near the pumping station and then the screen can be installed in one piece in the channel. It can also be assembled directly in the pit.



THRU-FLOW CONVERSION TO DUAL-FLOW

For existing sites, the BEAUDREY Thru-Flow Retrofit System consists in sliding a fabricated wall plate into the existing grouted guides of the Thru-Flow band screen and standing the new Dual-Flow band screen against it.



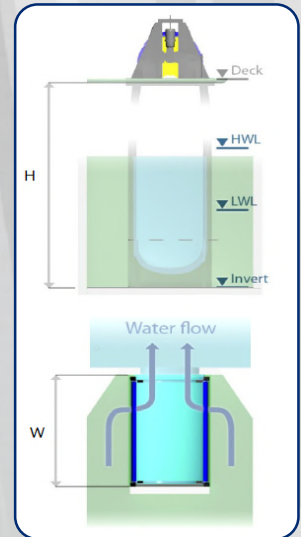
MATERIAL SIZES & DATA

MATERIALS

- ◆ Structure, mesh panels: Available in Epoxy painted carbon steel, Stainless steel (304L, 316L), Duplex or Super Duplex
- ◆ Screening mesh: Available in Stainless steel (304L, 316L), Duplex or Super Duplex or Synthetic material for the Nocling™ mesh
- ◆ Main shaft: Available in Epoxy painted carbon steel, Stainless steel (304L, 316L), Duplex or Super Duplex
- ◆ Chain links: Available in Duplex or Super Duplex for seawater, carbon steel for fresh water
- ◆ Nuts and bolts: A4, Stainless Steel, Duplex or Super Duplex for seawater. A2 or carbon steel for fresh water.

SIZES AND DATA

- ◆ Mesh aperture from 1x1mm to 10x10mm
- ◆ Channel height and tidal variation: H= No practical limit
- ◆ Screening panel useful width from W= 0.6m to 4m More on special request
- ◆ Flow rate: up to 70,000 m³/h (300,000 GPM)



ACCESSORIES

NECESSARY ANCILLARIES

- ◆ Spray-water supply circuit
- ◆ Head-loss monitoring system
- ◆ Electrical and control cabinet
- ◆ Upstream bar rack (20 to 75 mm bar spacing (1 to 3"))
- ◆ Pit dewatering stoplogs
- ◆ Trash collecting system (basket, etc)

OPTIONAL FEATURES

- ◆ Two or three-speed operation (up to 20m/min)
- ◆ Seismic qualification
- ◆ Jellyfish lifting trays
- ◆ Screening medium resistant to fiber build-up
- ◆ Screening medium preventing jellyfish adherence
- ◆ Cathodic protection (Anodes or impressed current)
- ◆ Low pressure water-life protection system (316B)
- ◆ "Scoop-a-fish™" total fish survival system



Contact us for a quote at
www.beaudrey.com/contact