

# TRAVELLING BAND SCREEN

## THRU-FLOW



### BENEFITS

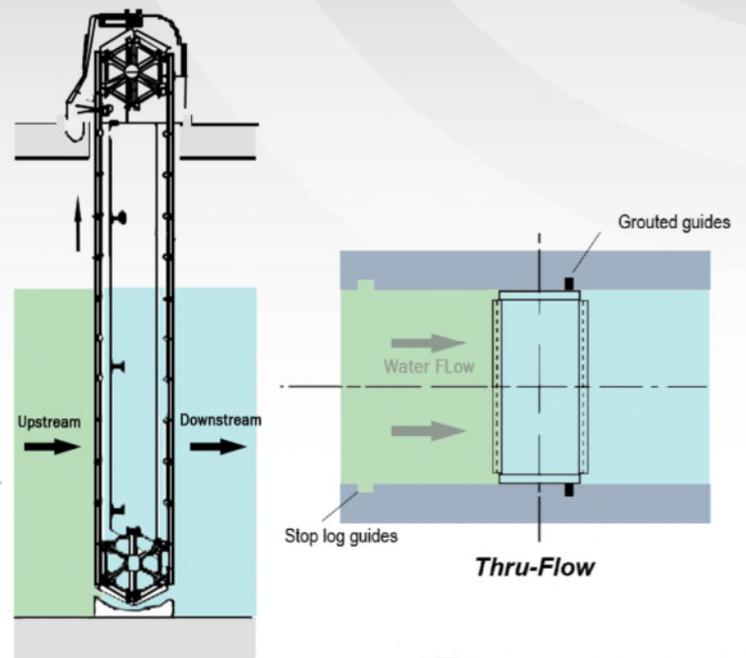
- ◆ Simple civil works
- ◆ Large screening frontal width (up to 5m)
- ◆ Capable of **high speed rotation** (up to 20m/min)
- ◆ Easy and reduced maintenance compared to other screens on the market
- ◆ Premium quality construction and robust design
- ◆ Designed to meet seismic qualifications
- ◆ Tightness up to 95%

### 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

### LAYOUT

- ◆ The water flows across the upstream and then the downstream panels. The debris are arrested on the upstream face



## DESCRIPTION AND OPERATION

- ◆ Installed across a channel in which the water to be cleaned flows through. The screen consists of a set of rectangular screening mesh panels, carried by two endless chains. The downstream panels travel down into the water, around the bottom and up again along the upstream side
- ◆ 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 downstream 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

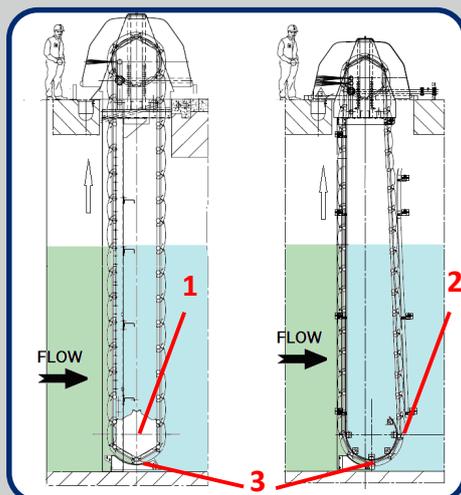
- ◆ BEAUDREY travelling band screen panels are equipped with modular **screening mesh** of two different types:
  - ◇ Stainless steel woven mesh (304L, 316L, Duplex or Super Duplex) – from 1x1mm to 10x10mm aperture
  - ◇ BEAUDREY patented Nocling™ mesh (composite) – for 5x5 and 6x6 mm aperture
- ◆ BEAUDREY's exclusive screening panel design ensures the best possible tightness between consecutive panels (horizontally) and also between panels and guide frames (on the

### HEAD FRAME

- ◆ Beaudrey recommends using **direct coupling** for gear-reducer which is a maintenance cost saving compared to indirect transmission using chain and pinion. However, whenever the space between two adjacent channels is small (<1m), indirect transmission is proposed with chains
- ◆ Sprocket teeth are removable. The height of the bearings and the shaft can be adjusted using jack screws and capstan nuts that are supported by the head frame
- ◆ 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** to respect local fish and environmental regulations

### CHAINS AND STRUCTURE

- ◆ Chain design reflects the **best state of the art**. It consists of heavy duty links, bushes, pins and rollers. **Strong materials such as special steel (for fresh water), Duplex or Super Duplex stainless steel (for seawater application)**



### BOTTOM FRAME

- ◆ Beaudrey Thru-Flow band screens are available with 2 bottom layouts depending on client specifications
- ◆ A bottom shaft (marked 1) or a curved rail (marked 2) helps the chain to rotate on the downstream side
- ◆ A bottom closing seal plate (marked 3), fixed on the bottom of the channel, prevents large-sized trash to by-pass the band screens on the bottom area

## CONSTRUCTION



Direct Coupling



Indirect transmission with chain

## 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
- ◆ Nuts and bolts: A4, Stainless Steel, Duplex or Super Duplex

### 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 5m
- ◆ Flow rate: up to 70,000 m<sup>3</sup>/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





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