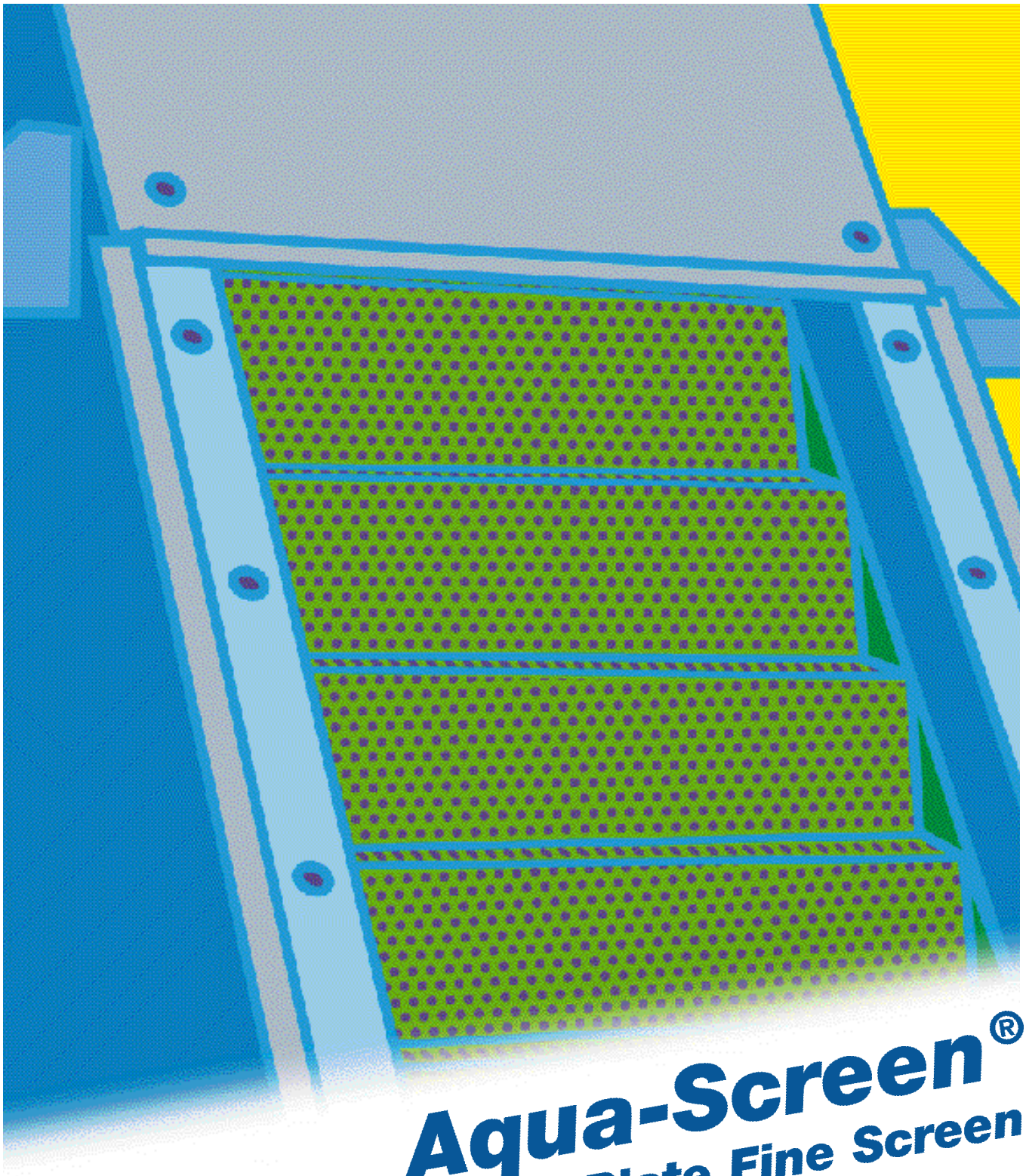


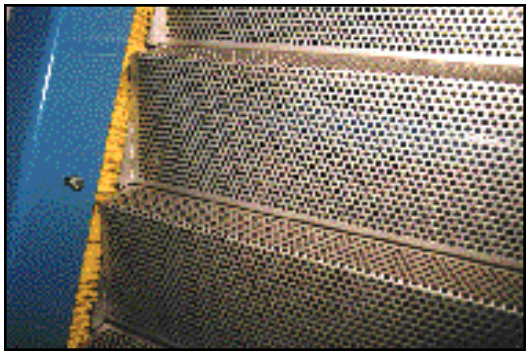
Aqua-Screen®

Perforated Plate Fine Screen

Environment and Process Technologies

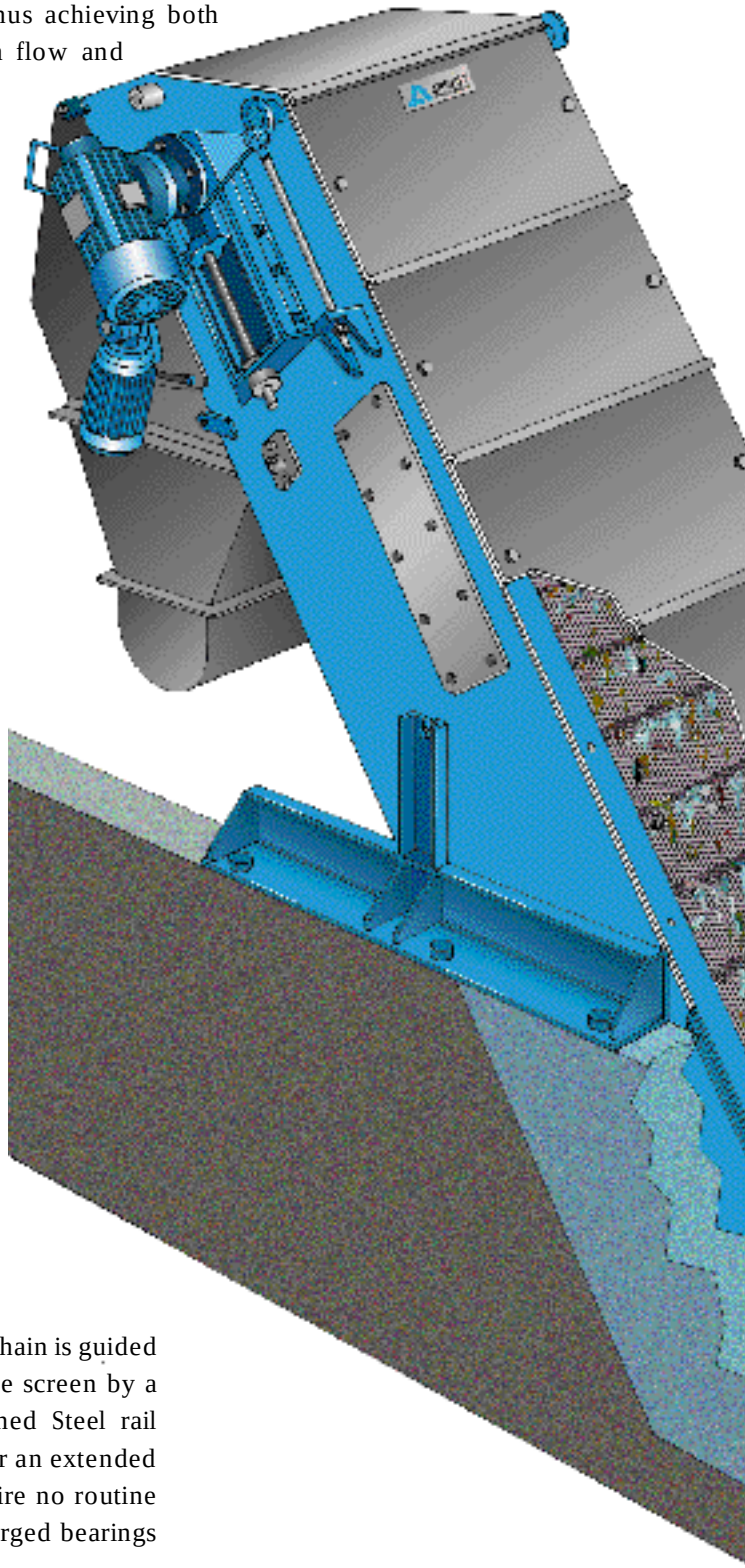
ANDRITZ

Perforated Panels

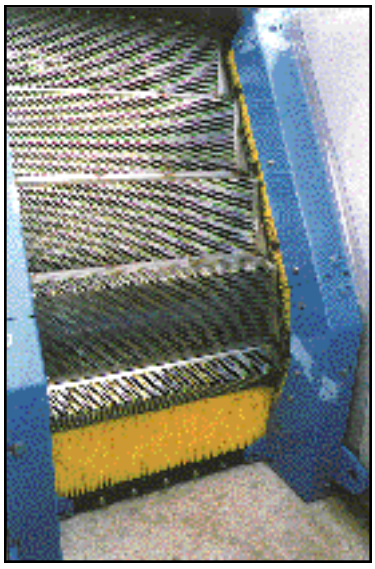


The interlocking filter panels are perforated with 6 mm diameter holes (other sizes available) and fabricated in either 2 mm or 3 mm thick Stainless Steel. The panels are available with a range of open areas which allows the optimum screen width to be selected thus achieving both the maximum flow and minimum headloss.

The angled step on each panel ensures that large debris is captured.

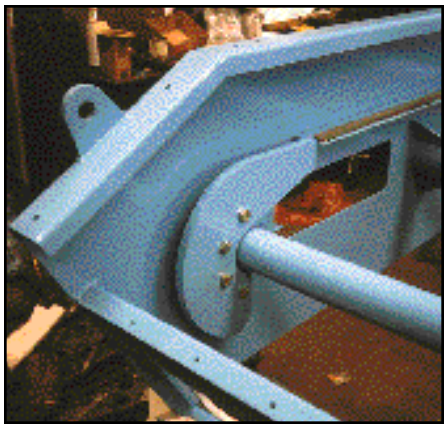


Channel Sealing



The Polyester bottom brush ensures that no solids pass under the screen. The screen frame is sealed against the channel sides by Stainless Steel plates with plastic inserts.

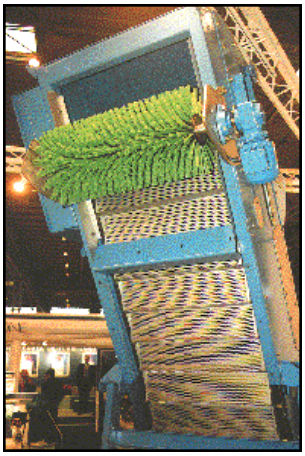
Bottom Guide Rail



The travelling drive chain is guided round the base of the screen by a curved solid Hardened Steel rail which is designed for an extended life and should require no routine maintenance. Submerged bearings are not fitted.

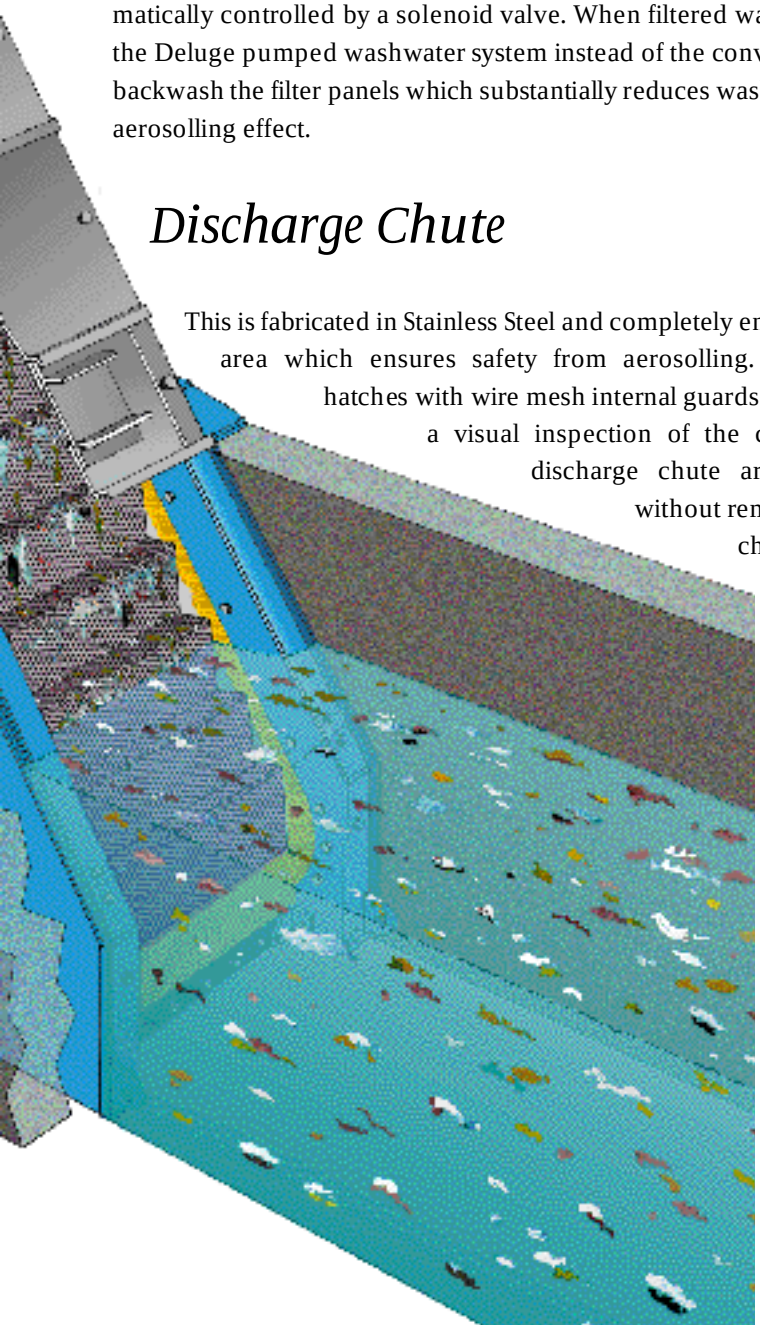
Cleaning Brush

The high speed rotating brush comprises several individual brush elements mounted on a large diameter shaft. To ensure optimum coverage of the cleaning area individual brush segments can be fitted with differing lengths of bristles whilst the bristle flexibility can be easily changed to suit the effluent being handled. Typically, a more flexible bristle is better at removing grease and fat whilst a rigid bristle is more suited to effluents with a high rag content. Full pendular adjustment ensures that the brush can be moved closer to the belt to compensate for periodic wear thus ensuring cleaning efficiency is optimised and wash-water consumption is minimised. The brush is directly driven by a separate geared electric motor.



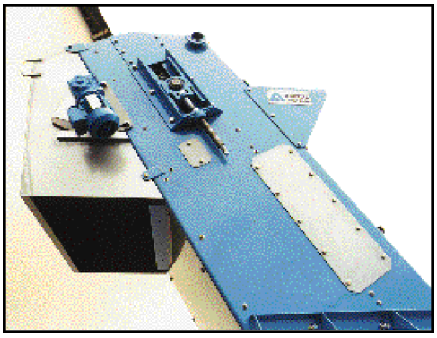
Washwater Options

The **AQUA-SCREEN®** is designed to use a minimum of washwater and the standard spray bar extends the full width of the screen. The nozzles are designed for us with filtered water (final effluent or potable water) and the washwater cycle is automatically controlled by a solenoid valve. When filtered water is not available then the **AQUA-SCREEN®** can be fitted with the Deluge pumped washwater system instead of the conventional spraybar. This unique system uses screened effluent to backwash the filter panels which substantially reduces washwater costs, operates without blockages and creates no harmful aerosolling effect.



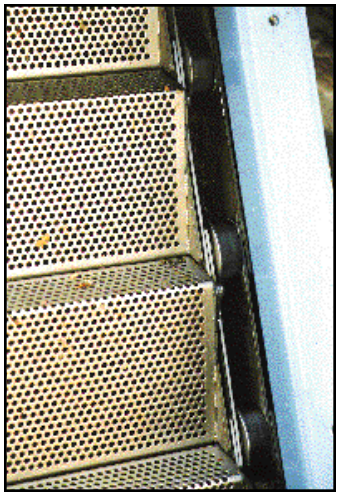
Discharge Chute

This is fabricated in Stainless Steel and completely encloses the discharge area which ensures safety from aerosolling. Hinged inspection hatches with wire mesh internal guards are provided so that a visual inspection of the cleaning brush and discharge chute areas can be made without removing the complete chute assembly.



Travelling Chain

The perforated plate panels are connected to heavy duty Stainless Steel double link travelling chains which run on Hardened Steel guide rails. The chains are protected from contamination from the debris by a continuous Polyester sealing brush.



The Andritz AQUA-SCREEN® is based on the design and construction of the Andritz AQUA-GUARD® which has proved itself a durable and reliable fine screen with over 5000 units sold worldwide since 1980.

Operating Principle

The **AQUA-SCREEN®** is a continuous belt fine screen which can be easily installed in all types of channels. The flow capacity is dependant on the screen width, the perforation size, the open area of the filter panels and the upstream water level in the channel. Each screen can be designed exactly to suit the prevailing hydraulic conditions and can be operated either manually, on a timer basis or fully automatically using differential level controls. The **AQUA-SCREEN®** uses interlocking perforated plate panels to remove floating and suspended solids in the effluent flow. The stepped panels are carried on heavy duty travelling chains which are protected from the ingress of debris by Polyester bristle brushes. The captured screenings are elevated out of the flow and automatically ejected down a totally enclosed discharge chute. Cleaning of the belt is done in two stages: firstly the screen panels are backwashed with a high pressure spraybar (or low pressure Deluge) then the high speed rotating brush removes any remaining debris including fatty and fibrous material. The pendular adjustment on the brush allows it to be moved closer to the belt to compensate for any wear that may take place. All routine maintenance can be carried out above ground level (there are no submerged bearings) and the stepped panels can be easily replaced individually.

Construction

The **AQUA-SCREEN®** is of robust construction throughout and the heavy duty frame is fully reinforced. It is available in Epoxy Coated Carbon Steel or Stainless Steel whilst the travelling chain and filter plate panels are made in Stainless Steel. The guide rails for the chain are Hardened Steel as are the top sprocket and curved bottom guide. The discharge chute and protective close fitting front covers are fabricated in Stainless Steel with hinged inspection hatches which incorporate mesh guards. The rotating brush, bottom brush and chain sealing brushes are in hard wearing Polyester. The drive motor and brush motor are both direct driven through integral reduction gearboxes.

Other Andritz Screening Equipment

AQUA-GUARD®	Continuous belt screen ideal for high fat effluents
AQUASPIR®	Screw type screen with integral compactor
COMBI-GUARD®	Automatic sludge screen in enclosed tank
ROTOSPIR®	Shaftless screw conveyor for wet screenings
ROTOPRESS®	Shafted screw compactor dewaters wet screenings
ROTOWASH®	Washing + dewatering unit produces very clean screenings
HYDRASIEVE®	Wedgewire static rundown screen for Sewage and Industrial effluents
GIRASIEVE®	Rotating wedgewire drum screen for a wide range on Industrial effluents

Advantages

Mechanical Features	Process Benefits
● Robust frame reinforced ● Heavy duty travelling drive chain ● Hardened steel guide rails ● No submerged bearings ● Fully adjustable cleaning brush ● Interchangeable brush sections	● High capture rate ● Low headloss ● Low washwater consumption ● Low power requirements ● Intermittent operation ● Easy installation
Operational advantages	**Commercial benefits**
● Low maintenance requirements ● Perforated panels easily removed ● Spraybar or Deluged washwater ● No "hairpinning" problems ● No "fatting up" problems	● Competitively priced ● Short delivery ● Spare parts stocked locally ● Service backup ● Customised screen sizing

Screen Sizes

Screen widths	Screen discharge heights	Screen mesh	Flow rates
0.5 metres to 2.5 metres *(in 100 mm increments)*	**1.5 metres to 10 metres** *(in 100 mm increments)*	**6 mm diameter** *(others sizes available)*	**Up to 2500 litres/sec.** *(dependant on water level)*

Applications

Municipal sewage
- River water intake
- Sewage screening at inlet works
- Screening works and Imported sludge
- Screening before bio-filtration plants

Industrial
(Chemistry - Pulp and Paper - Miscellaneous)
- Intake water (from river, lake, channel)
- Screening before pumping stations
- Process water screening

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