

AQUA-SCREEN™ water treatment equipment

Perforated-plate fine screen



ASK YOUR
SEPARATION
SPECIALIST

AQUA-SCREEN™ water treatment equipment

Perforated-plate fine screen

The ANDRITZ AQUA-SCREEN® water treatment equipment is based on the design of the self-washing continuous fine screen with teeth, which has proved its value as a durable and reliable fine screen, with over 5,000 units sold worldwide since 1980.

Operating principle

The AQUA-SCREEN water treatment equipment is a continuous-belt fine screen that can be installed easily in all types of channels. The flow capacity depends on the screen width, the perforation size, the open area of the filter panels, and the up-stream water level in the channel.

The AQUA-SCREEN water treatment equipment uses interlocking, perforated-plate panels to remove floating and suspended solids in the effluent flow. The stepped panels are carried on heavy-duty traveling chains, which are protected against debris entering by brushes with polyester bristles. The screenings captured are lifted out of the flow and automatically ejected down a totally enclosed discharge chute.

The belt is cleaned in two stages: first, the screen panels are backwashed with a high-pressure spray bar (low-pressure Deluge system), 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. Intermittent operation of this fine screen minimizes wear and optimizes the screening efficiency in relation to the filter area.

- The material piles up, thus blinding the screen and increasing the effectiveness and the fineness of filtration.
- Large quantities of screening material form layers, which can be discharged more easily.

This is why ANDRITZ recommends intermittent operation by measuring the headloss (DH = difference between the upstream and downstream water levels).



4. Cleaning brush



3. Bottom guide rail



2. Channel sealing



5. Discharge chute

Design

The AQUA-SCREEN water treatment equipment is of robust design throughout and the heavy-duty frame is fully reinforced. It is available in epoxy-coated carbon steel or stainless steel, while the traveling chain and filter plate panels are made of stainless steel.

1. Perforated panels

The interlocking filter panels are perforated with holes 6 mm in diameter (other sizes available) and fabricated in stainless steel either 2 or 3 mm thick. 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 head loss. The angled step on each panel ensures that large pieces of debris are captured.

2. Channel sealing

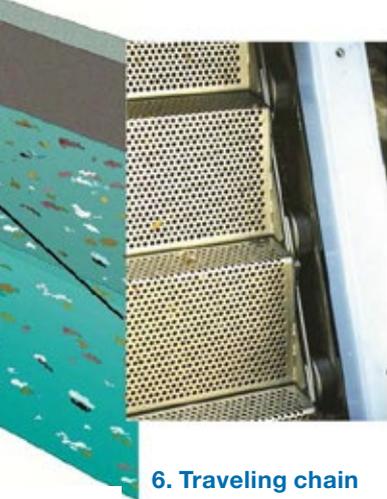
The polyester bottom brush ensures that no solids pass under the screen. The screen frame is sealed against the channel sides by stainless steel plates with plastic inserts.

3. Bottom guide rail

The traveling 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.



1. Perforated panels



6. Traveling chain

4. Cleaning brush

The high-speed, rotating brush comprises several individual brush elements mounted on a large diameter shaft. Typically, a more flexible bristle is better for removing grease and fat, while 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 that cleaning efficiency is optimized and washwater consumption is minimized. The brush is driven directly by a separate geared electric motor.

5. Discharge chute

This is fabricated in stainless steel and completely encloses the discharge area, which protects against aerosoling. Hinged inspection hatches with internal wire mesh guards are provided so that the cleaning brush and discharge chute areas can be inspected visually without removing the complete chute assembly.

6. Traveling chain

The perforated-plate panels are connected to heavy-duty stainless steel, double-link traveling chains, which run on hardened-steel guide rails. The chains are protected against contamination by the debris by means of a continuous-operation, polyester cleaning brush.

Washwater options

The AQUA-SCREEN water treatment equipment is designed to use a minimum of washwater and the standard spray bar extends over the full width of the screen. The nozzles are designed for use with filtered water (final effluent or potable water), and the washwater cycle is controlled automatically by a solenoid valve. When filtered water is not available, the AQUA-SCREEN water treatment equipment can be fitted with the Deluge pumped washwater system instead of the conventional spray bar. This unique system uses screened effluent to backwash the filter panels, which substantially reduces washwater costs, operates without blockages, and does not create any harmful aerosoling effect.

Advantages

Mechanical

- Robust frame, reinforced
- Heavy-duty traveling drive chain
- Hardened steel guide rails
- No submerged bearings
- Fully adjustable cleaning brush
- Interchangeable brush sections

Process benefits

- High capture rate
- Low head loss
- Low washwater consumption
- Low power requirements
- Intermittent operation
- Easy installation

Operational advantages

- Low maintenance requirements
- Perforated panels easily removed
- Spray bar or deluge washwater system

Models

Screen widths (mm)	Discharge heights (mm)	Screen mesh (mm)	Flow rates
500 to 2500	1500 to 10000	3, 6, 10	300 to 2500 liters/sec.



Typical applications

- Screening at inlet of municipal or industrial sewage treatment plants
- Water intake of water treatment plant (river, lake, ...)

Industry

- Pulp and paper
- Meat processing, slaughterhouses
- Vegetable and fruit processing
- Food industry
- Wineries, breweries
- Textile industry
- Tanneries, bleaching, dyeing



NORTH AMERICA

ANDRITZ SEPARATION Inc.

Phone: +1 (817) 465 5611
Fax: +1 (817) 468 3961
separation.us@andritz.com

EUROPE

ANDRITZ AG

Phone: +43 (316) 6902 2318
Fax: +43 (316) 6902 92318
separation@andritz.com

CHINA

ANDRITZ (China) Ltd.

Phone: +86 (757) 6663 3419
Fax: +86 (757) 6663 3448
separation.cn@andritz.com

AFRICA

ANDRITZ Delkor (Pty) Ltd.

Phone: +27 (11) 466 2361
Fax: +27 (86) 636 2122
separation.za@andritz.com

SOUTH AMERICA

ANDRITZ SEPARATION Ltda.

Phone: +55 (47) 3387 9110
Fax: +55 (47) 3387 9103
separation.bra@andritz.com

ASIA

ANDRITZ Singapore Pte. Ltd.

Phone: +65 (6512) 1800
Fax: +65 (6863) 4482
separation.sg@andritz.com

AUSTRALIA

ANDRITZ Pty. Ltd.

Phone: +61 (3) 8773 4888
Fax: +61 (3) 8773 4899
separation.au@andritz.com

andritz.com

*Trademark of the ANDRITZ GROUP. For more information regarding ownership and countries of registration, please visit andritz.com/trademarks.

All data, information, statements, photographs, and graphic illustrations in this leaflet are without any obligation and raise no liabilities to or form part of any sales contracts of ANDRITZ AG or any affiliates for equipment and/or systems referred to herein. © ANDRITZ AG 2016. All rights reserved. No part of this copyrighted work may be reproduced, modified or distributed in any form or by any means, or stored in any database or retrieval system, without the prior written permission of ANDRITZ AG or its affiliates. Any such unauthorized use for any purpose is a violation of the relevant copyright laws. ANDRITZ AG, Stattegger Strasse 18, 8045 Graz, Austria.

SE.AquaScreen.EN.1012