



## TASK

The fine screening of wastewater in channel or tank with a perforated or wedgewire screening drum – including subsequent screenings conveyance, washing, dewatering, compaction and discharge.

## SOLUTION

With the JOHNSON SCREENS® Rotary Drum Screen EMD, Bilfinger Water Technologies offers you a machine with a revolutionary concept. In contrast to conventional technology, the main parts of the JOHNSON SCREENS® Rotary Drum Screen EMD are totally bolted. The bottom bearing is protected to avoid clogging problems and this offers distinct advantages for both operation and maintenance.

## FUNCTION

The JOHNSON SCREENS® Rotary Drum Screen EMD is a combined machine consisting of a screen, a screw conveyor and compactor. The drum screen is installed in the channel at an angle of 35°. During operation, solids in the incoming flow larger than the screen opening size progressively collect inside the screen drum, causing a gradual blinding. Upstream water level rises due to the resistance in flow caused by solids deposited on the screen. At a pre-determined upstream level, the screen drum and screw conveyor starts rotating, immersing a clean section of the drum into the effluent; during the drum rotation the deposit of solids or screenings will be inverted and then fall into the screw conveyor by means of gravity and with assistance of a spray bar. Spray nozzles and brushes are fixed to the periphery of the screen drum and clean any residual solids from the screen surface. During the rotation the spiral brushes keep the internal perforated hopper cleaned from the screenings/solids. The screenings are conveyed, compacted and dewatered prior to being disposed into a waste container.

BILFINGER WATER TECHNOLOGIES

# JOHNSON SCREENS® Rotary Drum Screen EMD

## BENEFITS

- Cleaning brushes bolted on the bottom part of the spiral:
  - during the rotation of the spiral, brushes clean the internal drainage area of the hopper
- Easy of maintenance due to easy accessibility to the drive
- Compact design requires less space
- Easy and fast maintenance and low costs due to bolted main parts of the unit
- Internal drum design to guarantee the solids feeding into the screw conveyor



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## PRODUCT VARIANTS

In addition to the channel model for installation in open channels (gravity flow) the JOHNSON SCREENS® Rotary Drum Screen EMD can also be supplied as a tank model (pump infeed). Depending on the specific application the screen surface can either be manufactured from wedgewire or perforated plate.

## DESIGN SIZES

	Size	$W_{\min}$	D1
<b>EMD</b>	800	800	760
<b>EMD</b>	1,000	1,000	960
<b>EMD</b>	1,200	1,200	1,160
<b>EMD</b>	1,400	1,400	1,360
<b>EMD</b>	1,600	1,600	1,560
<b>EMD</b>	1,800	1,800	1,760
<b>EMD</b>	2,000	2,000	1,960
<b>EMD</b>	2,200	2,200	2,160
<b>EMD</b>	2,400	2,400	2,360
<b>EMD</b>	2,600	2,600	2,560

*W* = channel width [mm]

*D1* = machine width [mm]

## PERFORMANCE

- Flow rate: up to 6,000 m<sup>3</sup>/h
- Machine width: from 800–2,600 mm
- Channel width: from 800–2,600 mm
- Gap with:
  - perforated plate: 1–10 mm
  - wedgewire screen: 0.25–6 mm
- DS-content of discharged screenings: up to 35 %

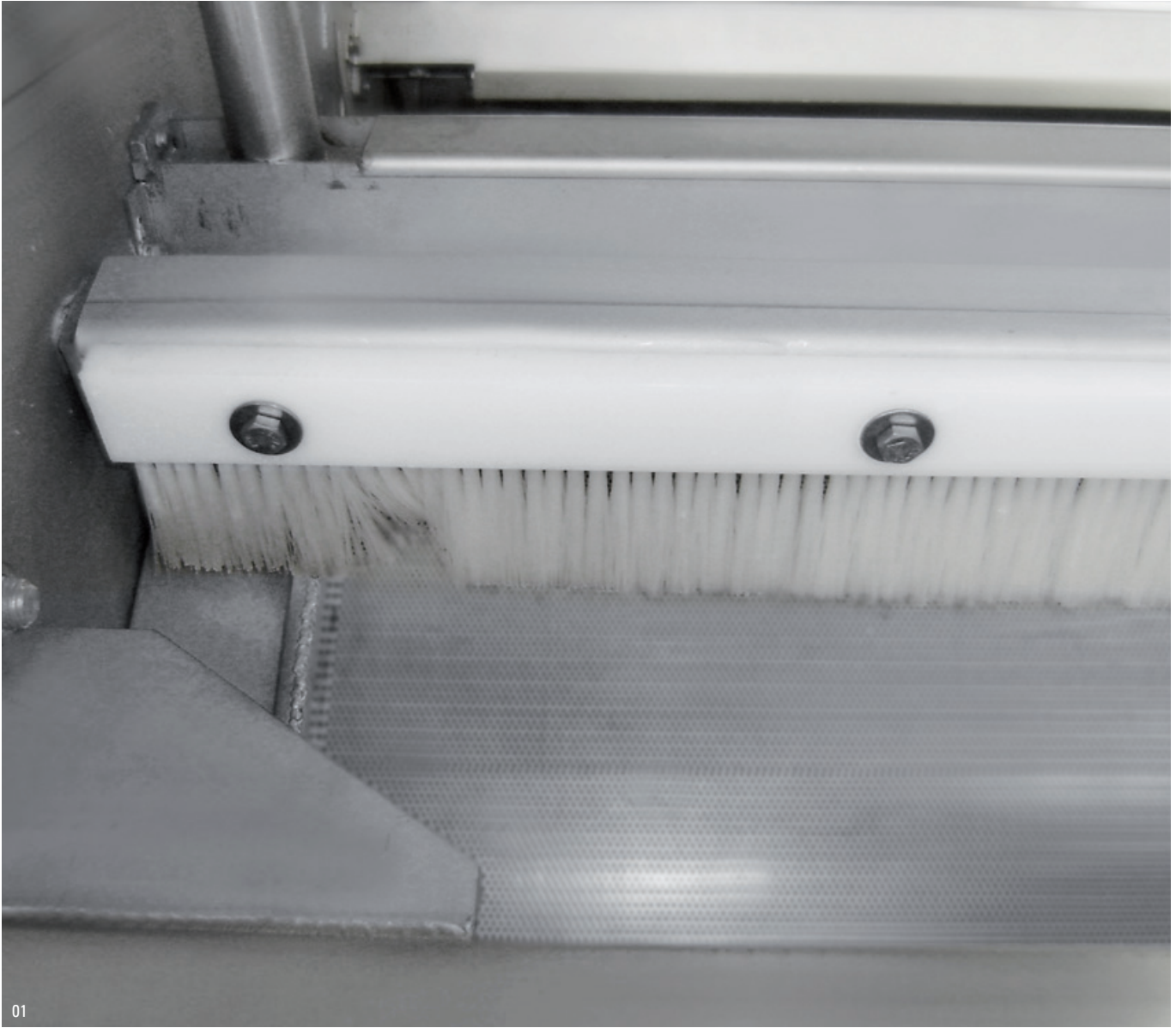
## MATERIALS

Our rotary drum systems are manufactured with high grade durable materials.

<b>Casing, supports, drum:</b>	stainless steel AISI 304L, alternatively stainless steel AISI 316L
<b>Spirals:</b>	special Micro Alloy Steel St.52 in accordance with JOHNSON SCREENS® standard, or stainless steel AISI 304L or AISI 316L
<b>Drum seal:</b>	Urethane 90 S
<b>Lower drum bearing:</b>	bronze

## OPTIONS

- Bagging unit for solids
- Screenings washing system
- Hygienic encapsulation
- Spirals made of stainless steel AISI 304L or AISI 316L
- Control panel IP65
- Protection cover for the channel version



01

01 \_ Detailed view drum and cleaning brush

02 \_ Rotary Drum Screen EMD  
in tank



02

### APPLICATIONS AND FIELDS OF OPERATION

- Fine screening in municipal water treatment
- Pre-screening in wastewater treatment plants
- Treatment of industrial wastewater

### UNIQUE FEATURES

- **Drum Seal:**  
Drum seal type Urethane 90S designed and tested to a sealing up to 200 micron.
- **Drum Design:**  
The rotary drum design ensures that separated solids are retained and cannot bypass the screen even at peak flow loading.
- **MBR (Membrane) Reactor Pre-Treatment:**  
The EMD perforated-hole drum screen is suitable for membrane processes due to high separation efficiencies using either a 1 or 2 mm mesh.

### Water Technologies

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*Rotary Drum Screen EMD in channel*