JOHNSON SCREENS® Double-Motor Rotary Drum Screen VERSA

APPLICATIONS & 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 90 S designed and tested to a sealing up to 200 micron.
- No Fix or Rotating Arm:
  Great benefits due to the fact that there are no fix or rotating arms in the lower part of the filtering drum. No possibility for the larger solids to be trapped within the machine.
- Double Gearbox:
  When the drum stops the spiral conveyor continues the rotation and lifts up the solids from the internal drum.
- 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 VERSA perforated-hole drum screen is suitable for membrane processes due to high separation efficiencies uses either a 1 or 2 mm mesh.

TASK
The fine screening of wastewater in channels or tanks with a perforated or wedgewire screen – including subsequent screenings conveyance, dewatering, compaction and discharge.

SOLUTION
With the JOHNSON SCREENS® Double-Motor Rotary Drum Screen VERSA, Bilfinger Water Technologies offers you a machine with a revolutionary drive concept. In contrast to conventional technology, the Rotary Drum Screen VERSA is designed without any bearing and fix/rotating arm in the lower part. The screening area is totally free with big advantages not only for the incoming solids, but also concerning head loss. This reversed power flow offers distinct advantages for both operation and maintenance.

FUNCTION
JOHNSON SCREENS® Double-Motor Rotary Drum Screen VERSA is an integrated 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 the predetermined upstream level, the screen drum and screw conveyor starts rotating, immersing a clean section of the screen into the effluent and lifting the screenings out of the wastewater, transporting the screenings to the top of the drum and dropping the screenings into the screw conveyor trough. Spray nozzles and a roller brush, are fixed to the periphery of the screen drum and clean any residual solids from the screen surface. During the screw rotation the spiral brushes keep cleaned the internal perforated hopper from the screenings/solids. The screenings are conveyed, compacted and dewatered prior to disposing the screenings into a waste container.

BENEFITS
- Double gearbox:
  - rotating drum/spiral independent from the spiral/drum rotation
  - internal and external drum is always clean due to independent gearbox
- Cleaning brushes bolted on the bottom part of the spiral:
  - during the rotation of the spiral, brushes clean the internal hopper
- Ease of maintenance due to easy accessibility to the drive
- Low construction height over upper edge of channel, or respectively greater discharge height possible with less ceiling height
- Compact construction requires less space
- Easy and fast maintenance and low costs due to bolted main parts of the unit
- Low head loss
- Internal drum design to guarantee the solids loading into the screw conveyor
The technical data stated in this brochure are indicative only and have to be determined for each individual case.

**PRODUCT VARIANTS**

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

**DESIGN SIZES**

<table>
<thead>
<tr>
<th>Size</th>
<th>W</th>
<th>D1</th>
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W = channel width [mm]  
D1 = machine width [mm]

**PERFORMANCE**

- Throughput: up to 6,000 m³/h
- Machine width: from 800 – 2,600 mm
- Channel width: from 800 – 2,600 mm
- Gap with:
  - perforated plate: 1 – 10 mm
  - wedge wire screen: 0.25 – 6 mm
- Dry matter content of discharged screenings: up to 35%

**MATERIALS**

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

- Casing, supports, drum: stainless steel AISI 304L, alternatively stainless steel AISI 316L
- Spirals: special Micro Alloys Steel St52 in accordance with JOHNSON SCREENS® standard, or stainless steel AISI 304L or AISI 316L
- Bull gear: C 45 Hot flame zinc + sealer
- Drum seal: Urethane 90 S
- Lower drum bearing: HDPE

**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
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BILFINGER WATER TECHNOLOGIES

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