NOGGERATH® Spiral Sieve NSI

**TASK**
Fine screening of wastewater in a channel or tank with a perforated or wedgewire screen, including conveyance of screenings, dewatering, compacting and discharge.

**SOLUTION**
Equipment for the fine screening of wastewater in inlet constructions has been part of the Bilfinger Water Technologies standard range since 1988. Our compact and robust spiral sieves are ranked among the best machines of their kind in the world.

**FUNCTION**
The liquid flows into the sieve basket, which is open on the inlet side. Solids with a larger diameter than the hole/gap width are retained. A continuous layer of solids is thus formed on the surface of the screen, reducing free passage through it and causing the level of the liquid upstream of the screen casing to rise.

A level measuring device, installed upstream of the spiral screen, monitors the respective level of the liquid. When the preset maximum level is reached or exceeded, the drive of the spiral screen is automatically activated. The deposits of solids retained in the sieve basket are then conveyed by the spiral into the pressing zone and dewatered. A rotating scraper in the discharge area ensures that the dewatered solids are automatically discharged.

During the discharge procedure, the sieve basket surface is cleaned by means of a spiral brush mounted on the spiral. As a result of the cleaning and discharging processes, the level of the liquid upstream of the sieve basket drops. When this level reaches or falls below the set level, the spiral drive switches off automatically.

**BENEFITS**
- Fine screening and dewatering in one unit
- Simple retrofitting, no bed drop required
- Complete hygienic stainless steel encapsulation
- High operational reliability:
  - no blockages or pigtailings
  - no pressing of screenings through the sieve surface
- No service water required in the pressing zone

**APPLICATIONS & FIELDS OF OPERATION**
- Municipal wastewater treatment
- Pre-screening in wastewater treatment plants
- Industrial wastewater
- Sludge and septage screening
- Municipal and industrial wastewater treatment
- Screening of organics from wash water

**UNIQUE FEATURES**
Our spiral sieve solutions are suitable for both indoor and outdoor installation and have proven to be particularly economical in operation. No service water is needed with an installation angle of 35°, for example, and the brush, which is divided into two individually exchangeable elements, ensures fast and cost-effective maintenance.

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**OPTIONS**
- Screen panel as perforated sieve (2 – 10 mm) or wedgewire sieve (0.25 – 6 mm)
- Spiral brush made of stainless steel EN 1.4301 (AISI 304)
- Spiral made of stainless steel EN 1.4571 (AISI 316 Ti)
- Hygienic bagging of screenings
- Extended pressing zone for screenings with high faecal content
- Manual or automatic flushing of pressing zone (in extended pressing zone)
- Screenings washing bar with solenoid valve
- Heating/frost protection
- Transport area designed in U-trough form
- Installation angle 35° or 45°
PRODUCT VARIANTS, DESIGN SIZES & PERFORMANCE

NOGGERATH® Spiral Sieve NSI (channel version)
Standard design in completely encapsulated stainless steel casing, with vertically and horizontally swivelling spiral sieve.

<table>
<thead>
<tr>
<th>Diameter of sieve basket</th>
<th>NSI 200</th>
<th>NSI 300</th>
<th>NSI 400</th>
<th>NSI 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Installation angle 35°   | +       | +       | +       | +       |
| Installation angle 45°   | –       | +       | +       | +       |
| Channel width            | at least sieve basket diameter + 100 mm |
| Machine length (mm)      | variable |

NOGGERATH® Spiral Sieve NSI-B (in tank)
In the Spiral Sieve NSI-B design the spiral sieve is installed at an angle of 35° and integrated into a stainless steel receiving tank. This design is completely encapsulated in a stainless steel casing (size 500 with vertically and laterally swivelling spiral sieve).

<table>
<thead>
<tr>
<th>NSI-B 200/5</th>
<th>NSI-B 300/5</th>
<th>NSI-B 500/5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge height</td>
<td>700 mm</td>
<td>1,160 mm</td>
</tr>
<tr>
<td>Total length</td>
<td>1,876 mm</td>
<td>2,534 mm</td>
</tr>
<tr>
<td>Drive</td>
<td>0.37 kW</td>
<td>0.37 kW</td>
</tr>
<tr>
<td>Throughput capacity</td>
<td>up to 10 l/s</td>
<td>up to 25 l/s</td>
</tr>
</tbody>
</table>

NOGGERATH® Spiral Sieve NSI-FA (septic sludge receiving)
Septic sludge is generally contaminated with a high concentration of coarse and fibrous matter, which has to be removed by a screening process prior to entering the wastewater treatment plant. This can effectively be achieved with the NSI-FA 500/5 Sludge Receiving Station, an entirely encapsulated tank unit with an integrated Spiral Sieve NSI 500. The machine is operated in fully automatic mode and protected against overfilling by an optional electrical ball valve at the inlet.

The extended pressing zone, with pressing zone flushing, ensures that screenings with a high septic load are efficiently compacted. In order to record and register the intake of septic sludge, (computer-aided) unloader identification, flow meter and registration systems and also sampling device, pH, conductivity and temperature measuring devices are available.

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<tr>
<td>Discharge height</td>
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</tr>
<tr>
<td>Drive</td>
</tr>
<tr>
<td>Throughput capacity</td>
</tr>
</tbody>
</table>

MATERIALS
Casing, supports, wear rails: stainless steel EN 1.4301 (AISI 304) or stainless steel EN 1.4571 (AISI 316 Ti)
Spirals: special steel in accordance with NOGGERATH® standard
PRODUCT VARIANTS, DESIGN SIZES & PERFORMANCE

NOGERATH® Spiral Sieve NSI (channel version)
Standard design in completely encapsulated stainless steel casing, with vertically and horizontally swivelling spiral sieve.

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</tr>
<tr>
<td>Installation angle 35°</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Installation angle 45°</td>
<td>–</td>
<td></td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Channel width</td>
<td>at least sieve basket diameter + 100 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine length (mm)</td>
<td>variable</td>
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</tr>
<tr>
<td>Total length</td>
<td>1,876 mm</td>
<td>2,534 mm</td>
<td>3,057 mm</td>
</tr>
<tr>
<td>Drive</td>
<td>0.37 kW</td>
<td>0.37 kW</td>
<td>0.75 kW</td>
</tr>
<tr>
<td>Throughput capacity</td>
<td>up to 10 l/s</td>
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<td>up to 80 – 120 l/s</td>
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<td>Drive</td>
<td>1 kW</td>
</tr>
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<td>Throughput capacity</td>
<td>100 m³/h</td>
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