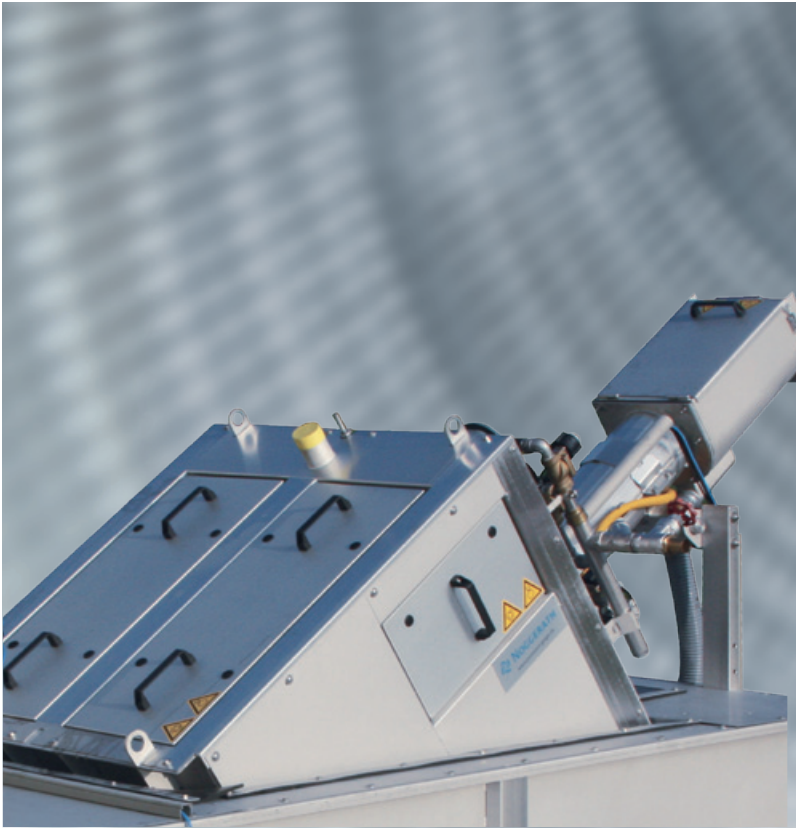




TASK

The fine screening of wastewater in channel or tank with a perforated or wedgewire screen or a mesh covering – including subsequent screenings conveyance, dewatering, compacting and discharge.

SOLUTION

With the NOGGERATH® Rotary Drum Screen NTS, Bilfinger Water Technologies offers you a machine with a revolutionary drive concept. Contrary to conventional technology, to drive the drum screen via its discharge conveyor, in the case of the Drum Screen NTS the driving energy is induced directly at the drum. This reversed power flow offers distinct advantages for both operation and maintenance.

FUNCTION

The solids in the waste water are blinding the inner surface of the drum cylinder installed at 35°. The resulting headloss is detected by a differential level control sensor and the drum starts rotating. The captured solids are moved upwards with the drum. By gravity – and supported by a spray bar – they are dropping off into a conveyor trough located in the center of the drum, then are caught by the spiral and transported upwards, and finally reach the pressing zone for dewatering and discharge. Optional an additional screenings washing device is available.

BILFINGER WATER TECHNOLOGIES

NOGGERATH®
Rotary Drum
Screen NTS

BENEFITS

- No center/drive shaft required in the discharge conveyor:
 - significantly larger particle sizes can be transported
 - the spiral is open axially in the conveying direction at the discharge, i.e. no blockages due to long-fibred screenings or screenings prone to clogging
 - ease of access to pressing zone
 - pressing zone with back-pressure flap, i.e. influence on DS-contents possible
- Ease of maintenance due to good accessibility to drive
- Low total height above top edge of channel, or respectively higher discharge possible with less ceiling height
- Compact design – less space required



BILFINGER

**WATER
TECHNOLOGIES**

PRODUCT VARIANTS

In addition to the channel version for installation in open channels (gravity flow feed) the NOGGERATH® Rotary Drum Screen NTS can also be supplied as a tank version (pump infeed). Depending on the specific application, the screen surface can be perforated, wedgewire or mesh (in stainless steel or plastic). In the case of small perforations or respectively mesh covering, the drum screen consists of several drum basket segments which are individually fitted onto the drum and are, therefore, easy to dismantle or replace – e.g. for repair and maintenance.

DESIGN SIZES

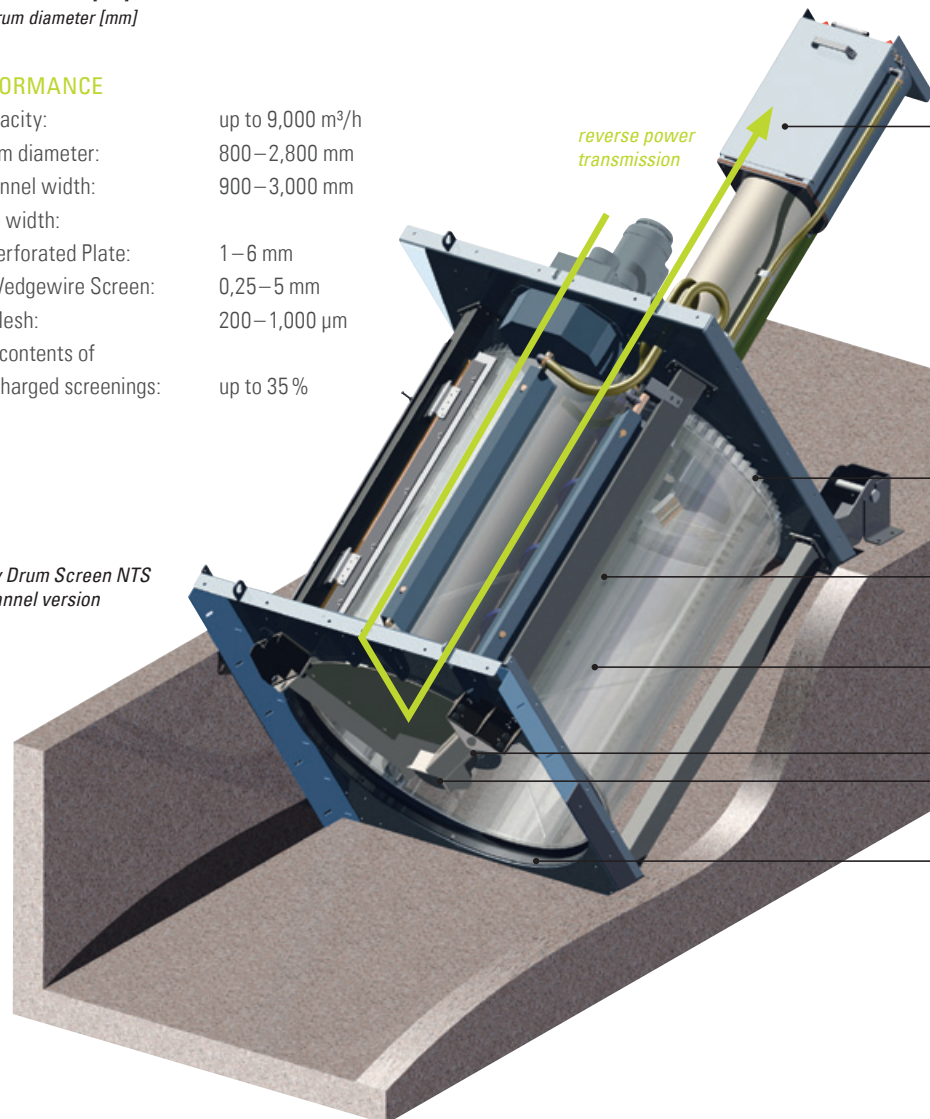
Design size	W _{min}	D1
NTS 800	900	800
NTS 1000	1,100	1,000
NTS 1200	1,300	1,200
NTS 1400	1,500	1,400
NTS 1600	1,700	1,600
NTS 1800	1,900	1,800
NTS 2000	2,100	2,000
NTS 2200	2,300	2,200
NTS 2400	2,500	2,400
NTS 2600	2,700	2,600
NTS 2800	2,900	2,800

W = channel width [mm]
D1 = drum diameter [mm]

PERFORMANCE

- Capacity: up to 9,000 m³/h
- Drum diameter: 800–2,800 mm
- Channel width: 900–3,000 mm
- Gap width:
 - Perforated Plate: 1–6 mm
 - Wedgewire Screen: 0,25–5 mm
 - Mesh: 200–1,000 µm
- DS-contents of discharged screenings: up to 35 %

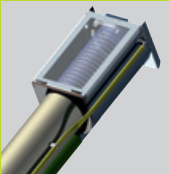
*Rotary Drum Screen NTS
as channel version*





UNIQUE FEATURES

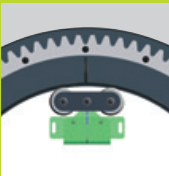
01



01 _ Wedgewire screen cylinder with back-pressure flap:

The classic wedgewire cylinder, adopted from our tried and tested spiral press, has also been provided with a back-pressure flap here, which – in addition to influencing the pressing result – assists the formation of a plug in case of a new start-up. As a result of the low discharge height and the pushing design of the spiral, with the drive at the opposite end to the discharge, the pressing zone is easily accessible at all times. It can be inspected from the outside via a hinged cover above the wedgewire screen cylinder. An automatic flushing of the pressing zone with a washing water drainage pipe ensures the cleaning of the screen basket surface at preset intervals.

02



02 _ Self-aligning double trunnion wheels on upper bearing:

The upper drum mounting is effected by means of self-aligning double trunnion wheels. This ensures smooth concentric running, continual optimal load distribution on all rollers and thus maximum service life.

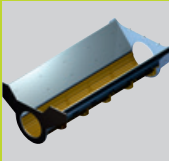
03



03 _ Shaftless spiral:

The tried and tested torsionally rigid, shaftless spiral in pushing mode ensures blockage-free discharge and enables the conveyance of solid particles up to a size equivalent to the spiral diameter.

04



04 _ Exchangeable slotted bottom (drainage):

The exchangeable drainage zone is made adjustable for adaption to the spiral respectively for compensation of its wear. The design of slotted drainage (alternating arrangement of horizontal and vertical flat bars) creates an increased drainage capacity and a self-cleaning effect. I.e. the NTS requires neither brushes nor wear rails.

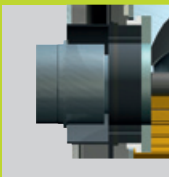
05



05 _ Curved rotating arm to increase the shear force:

The rotating arm is curved in order to increase the shear force on large long solids such as e.g. tree branches, which may be present. Such solids are thus directed further into the centre of the drum, where the leverage is more favourable. This leads to cracking into transportable sized pieces and avoids blockages of the drum.

06



06 _ Centre bearing on lower drum mounting:

A bronze sliding bearing with lifetime lubrication is fitted as the centre bearing of the lower drum mounting. This has proved to have particularly low maintenance needs i.e. it can be replaced easily and quickly.

07



07 _ Double elastomer drum seal:

Due to the double elastomer drum seal in back-to-back arrangement, solids (even the smallest solid particles) are held back. Design criteria in this case are, in addition to a high level of reliability, good accessibility and ease of maintenance.

MATERIALS

Our screening drum systems are manufactured exclusively in top quality durable materials:

Casing, supports, wear rails, drum:	stainless steel EN 1.4301 (AISI 304), alternatively stainless steel EN 1.4571 (AISI 316Ti)
Spirals:	special steel in accordance with NOGGERATH® standard or stainless steel EN 1.4571 (AISI 316Ti)
Drive gear wheel and gear rim:	PA 6 G
Drum seal:	elastomer against PE
Lower drum bearing:	bronze

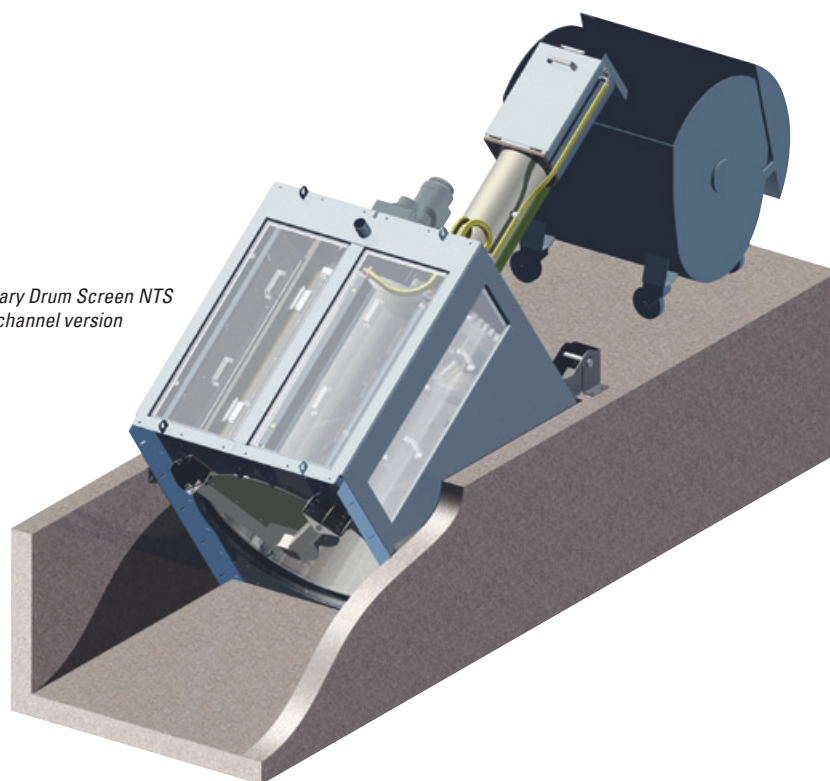
OPTIONS

- Hygienic bagging of screenings
- Screenings washing system
- Hygienic encapsulation
- Spirals made of stainless steel EN 1.4571 (AISI 316Ti)
- High pressure travelling nozzle to clean outside of drum with high-pressure water jet

APPLICATIONS & FIELDS OF OPERATION

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

*Rotary Drum Screen NTS
as channel version*



Water Technologies

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