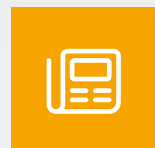


NETZSCH

Proven Excellence.



Areas of application

Pumps and Grinders for Wastewater Treatment Plants

Smart solutions for a clean environment

Pumps & Systems

NETZSCH Pumpen & Systeme

YOUR SPECIALIST IN WASTEWATER TREATMENT PLANTS

We offer a wide range of technologies for the entire wastewater treatment process – from conveyance and grinding to the precise dosing of solids. Our aim is not merely to supply products, but to provide well-designed system solutions that meet the specific requirements of every wastewater treatment plant.

TORNADO®
Rotary Lobe Pumps



N.Mac®
Twin Shaft Grinder



M-Ovas®
Universal Cutting Plate Macerator



PERIPRO®
Peristaltic Pumps



NEMO®
Progressing Cavity Pump



NEMO® BO/BS

NEMO® BF





WE WERE CONVINCED BY THE ADVANCE SUPPORT WE RECEIVED AND THE OVERALL SOLUTION PRESENTATION. WE HAVE BEEN WORKING WITH NETZSCH FOR SEVERAL YEARS, SO WE HAVE GREAT CONFIDENCE IN THE PRODUCT. IT DELIVERS PRECISELY WHAT WE NEED. THAT'S WHY I CAN RECOMMEND NETZSCH.

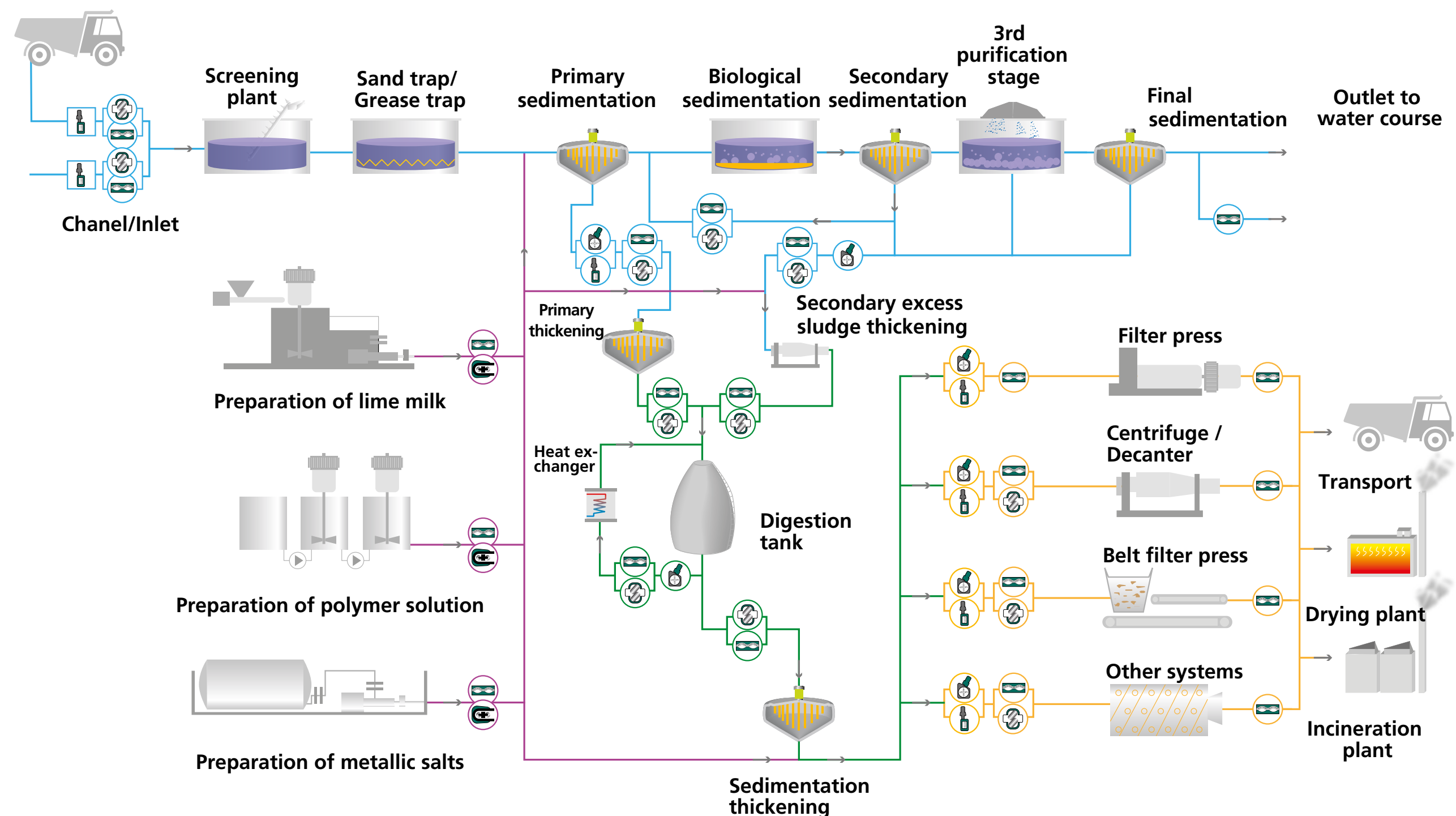


Quirin Schwaiger

Wastewater and Environment Association Chiemsee

Process at a wastewater treatment plant

We offer NEMO® progressing cavity pumps, TORNADO® rotary lobe pumps and PERIPRO® peristaltic pumps in various designs and materials – optimally suited for use in wastewater treatment plants. Both low-viscosity and abrasive slurries can be reliably conveyed via flanged connections. For media with a high dry matter content, such as dewatered slurries, NEMO® hopper pumps are available in various versions, with feeding screw or the aBP-Module® to prevent bridging.



Floating Sludge

Floating sludge and sludge foam are suspended sludge fractions that accumulate undesirably on the surface of the secondary clarifier and must therefore be pumped out. As this air-liquid

mixture contains a high proportion of gas, a NEMO® progressing cavity pump is particularly well-suited for reliable and continuous pumping. Where space is limited, a TORNADO® rotary lobe pump can be used as an alternative.

Concentrated sludge

Gravity thickening reduces the water content in the sludge, resulting in a dry matter content of 2 - 6%. These viscous, free-flowing to slow-flowing media can be reliably pumped over long distances and against high pressures using multi-stage NEMO® progressing cavity pumps. Alternatively, the space-saving TORNADO® rotary lobe pump is frequently used. Mechanical thickening produces a sludge with a dry matter content of 4 to 11% and can require a NEMO® pumps with a rectangular inlet hopper and feed.

Flocculating agent

To improve dewatering, polymer solutions are added to form stable solid flocs. Thanks to their suitability for viscous media and precise dosing, NEMO® progressing cavity pumps are ideal for this task.

De-watered sludge

Centrifuges, filter presses or belt presses can produce thick sludges with dry matter of 15 to 40%. The result is a solid, poorly flowing sludge that requires forced feeding into the pump. NEMO® pumps with a rectangular inlet hopper and feed screw are suitable for this purpose. The position-controlled feed screw ensures an optimal filling level. For sludges prone to bridging, the aBP-Module® reliably prevents blockages.

Liquid sludge

Liquid sludge (1–4 % dry matter) is produced in large quantities during the early stages of treatment and varies greatly in its organic and inorganic composition. Pumps are required for transport that can reliably handle high flow rates at low pressures. Both NEMO® progressing cavity pumps and TORNADO® rotary lobe pumps meet these requirements. NEMO® pumps with L or P geometry also offer a particularly high power density and impress with their long service life thanks to an extended sealing line and reduced rotor speed.

Lime milk & chemical dosing

Lime milk is used as a filtration aid in sludge dewatering and dosed for pH balance. The particle size of the calcium carbonate in lime milk varies depending on the raw material and manufacturing process – ranging from fine to coarse – and can be highly abrasive. Consequently, particularly durable materials are required. NEMO® progressing cavity pumps with wear-resistant rotor/stator materials are used to ensure a long service life. The virtually wear-free NEMO CERATEC® ceramic rotor, combined with an extremely abrasion-resistant elastomer stator, is the optimal solution. PERIPRO® peristaltic pumps are also ideally suited for pumping abrasive media such as lime milk and impress with their highly chemical resistant, wear resistant and energy efficient design.

Marine waste water

In shipbuilding, pumps must be compact, lightweight, robust and low-maintenance. The TORNADO® rotary lobe pump meets these requirements and is ideal for use as a bilge or waste water pump. NEMO® progressing cavity pumps are also available as bilge pumps and pumps for oil separator systems.



NEMO[®] progressing cavity pumps

NEMO[®] BO/BS HOPPER PUMP

NETZSCH BO/BS series hopper pumps are specifically designed for the reliable conveyance of highly viscous, thickened sewage sludge. Their square or rectangular inlet hopper ensures a uniform feed even at very high viscosities. The NEMO[®] progressing cavity pumps easily handle solids contents of over 8% and reliably prevent clogging, bridging and interruptions in flow – ideal wherever other pumping technologies reach their limits.

Media

- Floating sludge
- Thickened sludge

Wide range of flow rates and pressures

- Flow rates up to 200 m³/h
- Pressures up to 24 bar

Further features

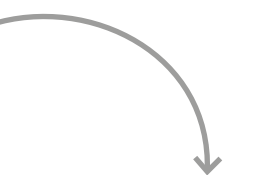
- Housing with rectangular/square inlet hopper and drive shaft with feeding screw featuring a buffer chamber for improved product feed into the conveying elements

★ Advantages:

- Continuous, pressure-stable conveying
- Speed-proportional dosing
- Variable, modular system
Robust and compact block construction
- The right joint for every application
- Mechanical seal as standard, other seals optional
- Gentle product conveying



Technical details



NEMO® BF HOPPER PUMP WITH aBP-MODULE®

To make sewage sludge suitable for storage and recycling, it must first be mechanically dewatered, and if necessary conditioned with flocculants, before being conveyed out of the plant via a pressure pipeline. The solid and non-uniform sludge can sometimes result in blockages and bridging. The BF hopper pump design features ensure reliable and continuous pump operation.

Media

- Dewatered sewage sludge

Wide range of flow rates and pressures

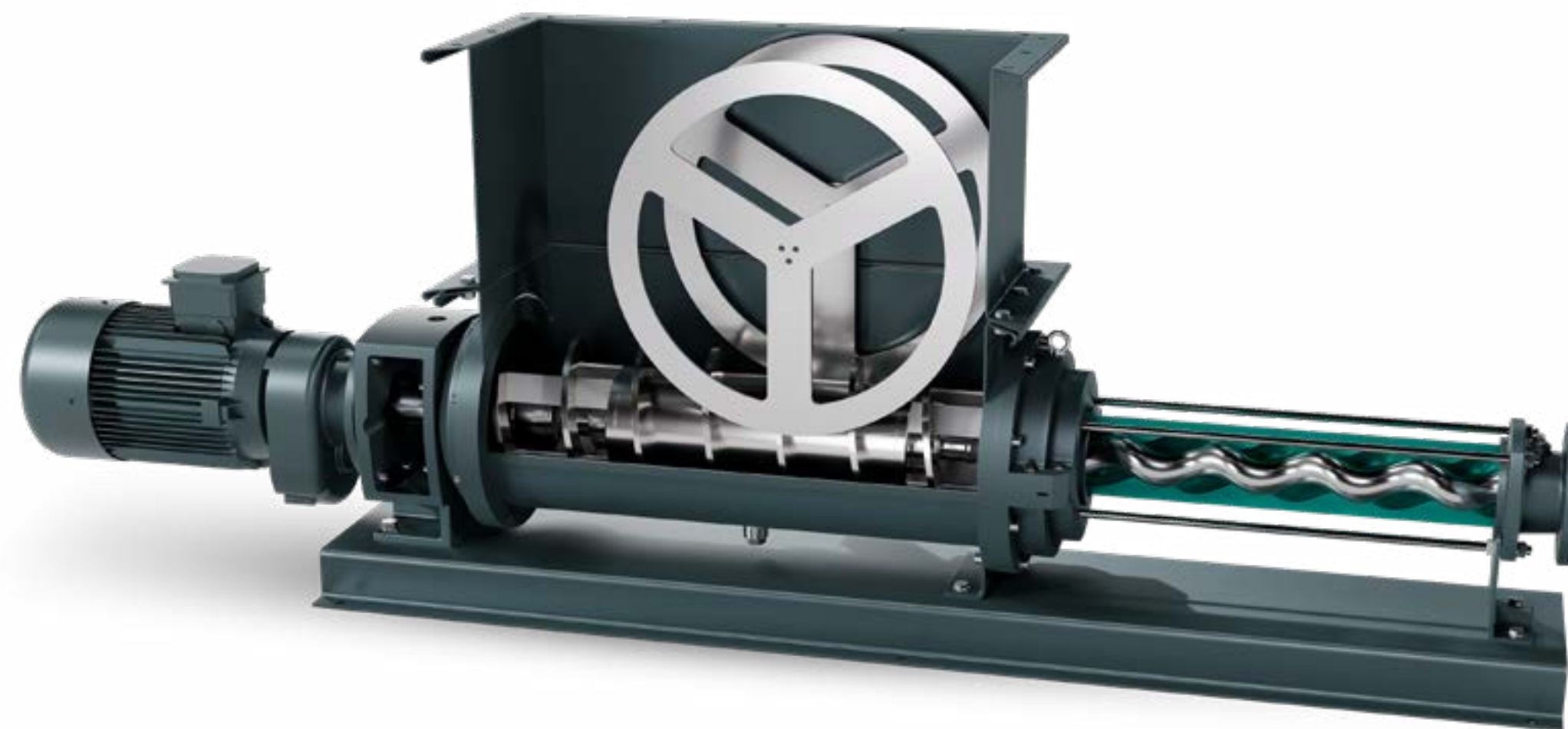
- Flow rates up to 120 m³/h
- Pressures up to 36 bar

Further features

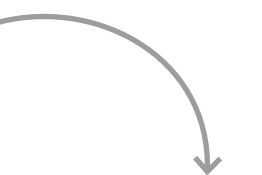
- Housing with enlarged, rectangular inlet hopper and removable, conical stuffing box, coupling rod with positioncontrolled transport screw for optimum product feed into the conveying elements.
- Optionally available with an aBP-module® to prevent bridging in the hopper housing

★ Advantages:

- No bridging
- Ideal adaptation of the differential speed of the spoke wheels to the respective conveying medium
- Variable, modular system
- Wide range of materials
- The right joint for every application
- Mechanical seal as standard, other seals optional



Technical details



NEMO® BY PROGRESSING CAVITY PUMP IN FSIP® DESIGN

The NEMO® pumps in the BY and SY series are designed for the particularly gentle and reliable handling of various media in wastewater treatment plants. Their robust construction and high-quality materials ensure a long service life, even under demanding operating conditions. At the same time, the pumps offer exceptionally high dosing accuracy, enabling precise and reproducible flow rates. The performance profile is complemented by high energy efficiency and a maintenance-friendly design that minimises service times and sustainably reduces operating costs.

Fluids

- High solids content
- Abrasive
- Low to high viscosity
- Lubricating and non-lubricating
- Dilatant, thixotropic or structurally viscous

Wide flow rate and pressure range

- Flow rates up to 400 m³/h
- Pressures up to 48 bar

Optional

- With protective sleeve
- With inspection port

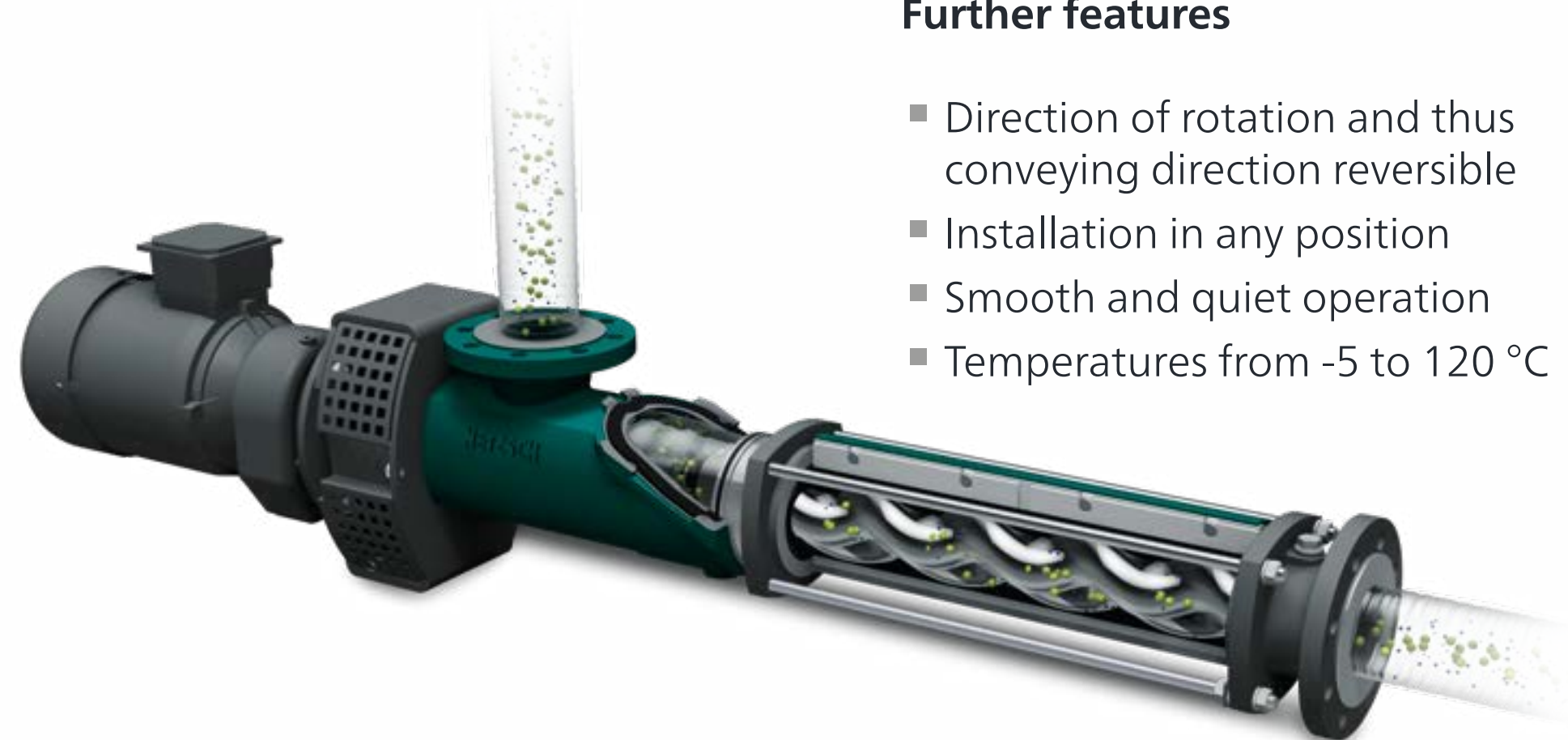
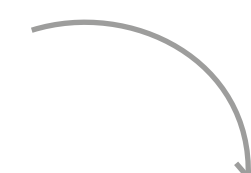
Further features

- Direction of rotation and thus conveying direction reversible
- Installation in any position
- Smooth and quiet operation
- Temperatures from -5 to 120 °C

★ Advantages:

- Continuous, low-pulsation delivery regardless of pressure and viscosity
- High suction and discharge capacity
- Low capital and operating costs
- High operational reliability
- Full Service in Place®: Pump maintenance can be carried out without dismantling the pipework or drive
- NEMO® SY with a bearing housing and exposed shaft end as an alternative

Technical details



TORNADO® rotary lobe pumps FOR ALL LIQUID SLUDGES

The TORNADO® T1 rotary lobe pump is the reliable solution for pumping viscous and solids-laden media in sewage treatment plants. It is ideally suited for the transport of primary sludge, activated sludge and digested sludge, as well as for applications in membrane bioreactors (MBR) – space-saving, efficient and reliable. The Full Service in Place® concept enables easy on-site maintenance and ensures maximum plant availability.

Media

- Primary sludge
- Digested sludge
- Secondary sludge

Wide flow rate and pressure range

- Flow rates up to 1400 m³/h
- Pressures up to 12 bar

Further features

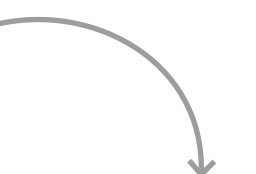
- Excellent wear resistance
- Valve-free design
- Insensitive to dry running

★ Advantages:

- High efficiency
- Direction of rotation and conveying direction reversible
- Can be installed in any position
- Smooth and quiet operation
- Low lifecycle costs
- Full Service in Place®: Pump maintenance possible without dismantling the pipework or drive



Technical details



PERIPRO® peristaltic pumps

LARGE ROLLERS FOR A LONGER SERVICE LIFE

The PERIPRO® peristaltic pump is ideal for use in sewage treatment plants for pumping abrasive, solids-laden or highly viscous fluids, as well as for the precise dosing of chemicals such as coagulants, lime milk or polymers. Thanks to its self-priming, dry-run-proof design, it operates reliably without pre-filling and, through low-shear pumping and easy hose replacement, provides a gentle, low-maintenance solution for wastewater treatment.

Media

- Lime milk
- Precipitating agent
- Chemicals / ferric

Features

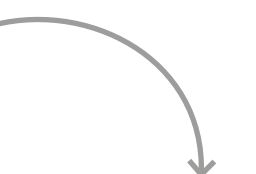
- Excellent abrasion and chemical resistance
- Extremely high suction capacity
- No valves or mechanical seals
- Dosing accuracy $\pm 1\%$

★ Advantages:

- Extremely long pump service life and outstanding performance
- Robust pump technology
- Easy hose replacement
- Low starting torque
- Insensitive to dry running
- Lower energy costs
- Low quantity of lubricant



Technical details



Grinding systems

M-OVAS® UNIVERSAL CUTTING PLATE MACERATOR

The M-Ovas® Universal Cutting Plate Macerator is ideal for use in sewage treatment plants, where contaminants in the fluid compromise process reliability. It reliably shreds or separates solids and fibres from the fluid (e.g. stones) to prevent blockages in pipes and damage to downstream equipment.

Design

- Compact design with high throughput
- Integrated separator tank with separate cleaning and drain ports
- Mechanically sealed with grease lubrication
- Optional reverse control
- Automatic wear compensation

Wide range of applications

- Wastewater
- Sludge

High throughput rates

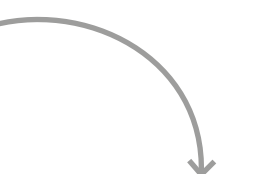
- Throughput capacities of up to 300 m³/h
- Substrates with a dry matter content of 10–12%

★ Advantages:

- Quick and easy disassembly of the cutting plate
- Low energy requirement with high throughput rate
- Effortless disposal of sedimented materials thanks to easy access
- Easy maintenance on site
- Cutting plate can be used on both sides
- Different cutting plates depending on the application



Technical details



N.MAC® TWIN SHAFT GRINDER

The twin-shaft grinders in inline design are ideal for use in the pipework of sewage treatment plants. They handle solids-laden flow rates of up to 400 m³/h and ensure reliable protection for downstream plant equipment. Contaminants such as sanitary products, leaves or wood are securely captured by the robust cutting blades and shredded efficiently and gently at low speeds. The N.Mac® is also available in a channel version for installation in a sewer.

Design

- Housing designed for installation in pipes and sewers
- Twin-shaft technology for grinding solids
- Low blade speed with high torque (reduction ratio 1:29)
- Hexagonal shafts made of hardened steel
- Various blade configurations available
- Optional control with direction of rotation reversal for protection against blockages
- Optional extended shaft for channel versions
- Optional with reverse control

Wide range of applications

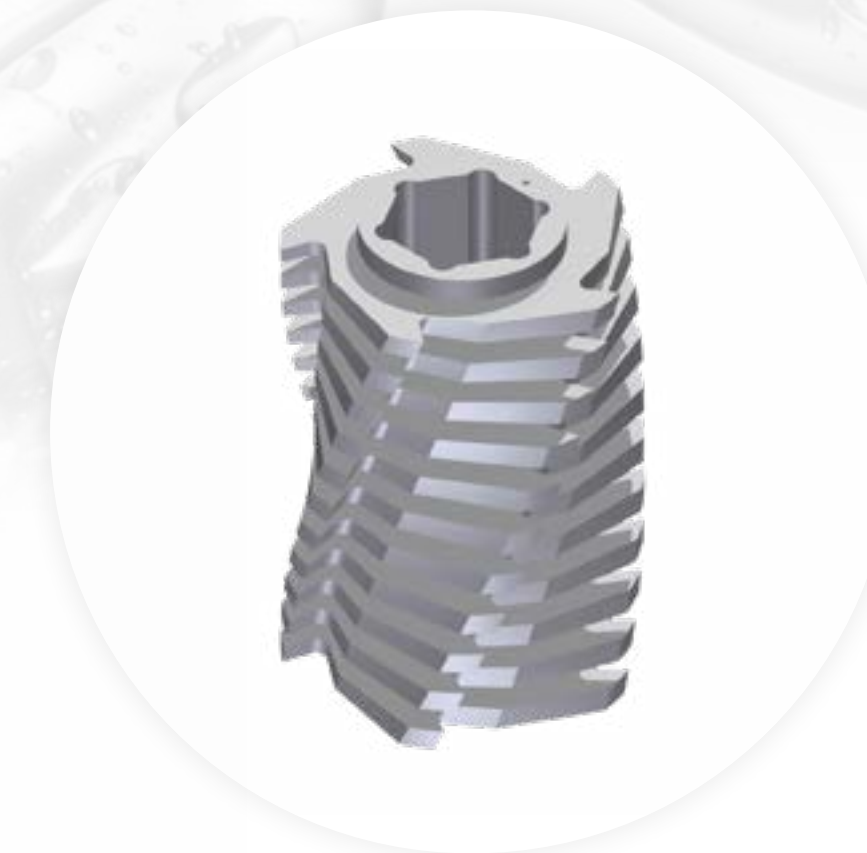
- Wastewater
- Sludge

High flow rates

- Flow rates up to 350 m³/h in inline design and up to 400 m³/h in channel design
- Substrates with a TR content of 10–12%

★ Advantages:

- Shock-absorption technology
- Mechanical seal with quench
- Modular design of the knife blocks
- Easy on-site maintenance
- Optional cleaning comb for fibrous materials
- Side rails for increased efficiency (throughput and cutting performance)



Channel

Inline

Service and Support

FOR US, PARTNERSHIP DOES NOT END WITH THE PURCHASE

We know no limits when it comes to offering our customers first rate service. Our promise is to deliver Proven Excellence – outstanding performance in all areas.



Unlimited personal support

Our experienced employees provide support and advice worldwide and around the clock, always tailored to your specific requirements. With our global network of service locations and warehouses, we guarantee prompt and efficient support, including on site and in person, so your pumps can always run smoothly.



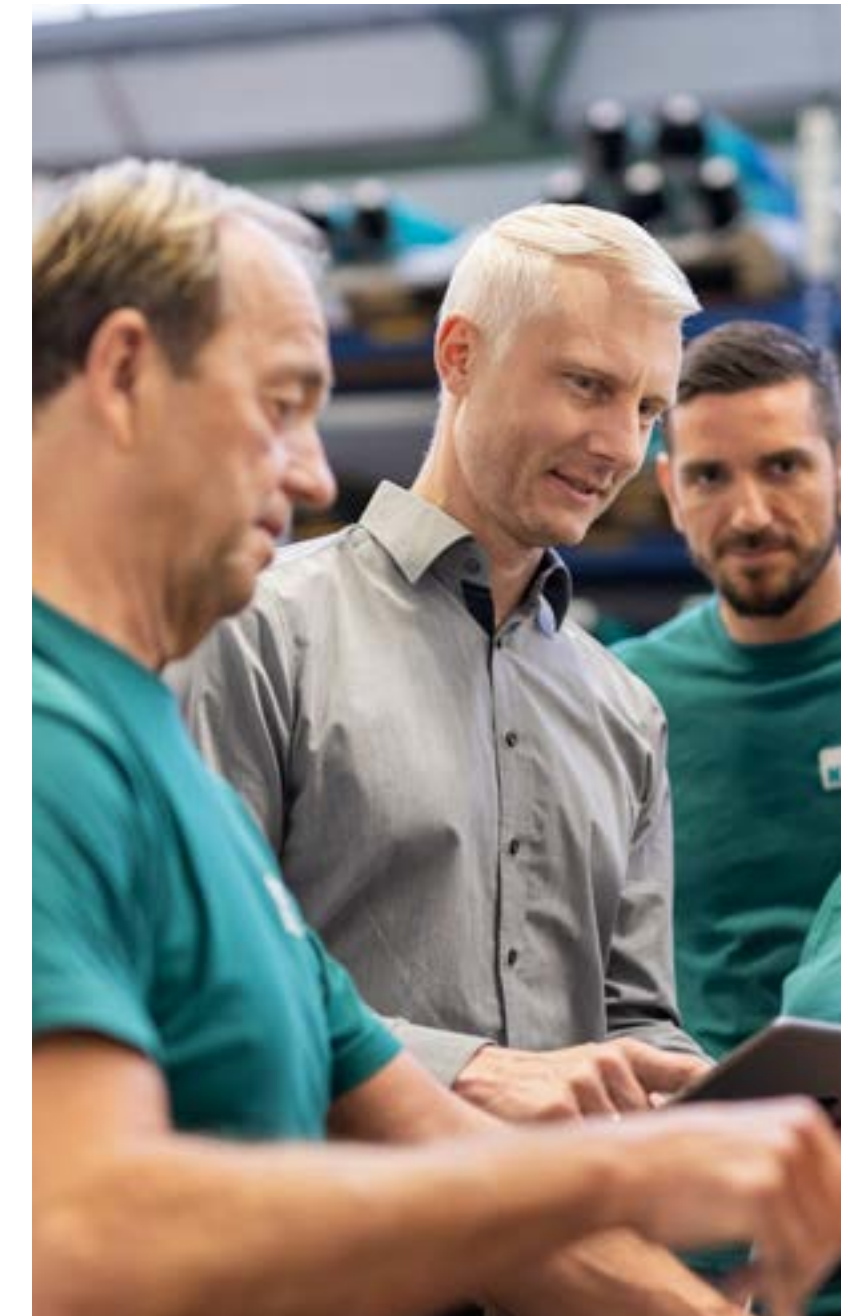
Spare parts

NETZSCH original spare parts stand for the highest manufacturing quality. We ensure reliable quality through worldwide implementation of uniform standards as per DIN EN ISO 9001. This enables reliable operation of your pumps with little downtime and low maintenance costs, and therefore continued optimum performance.



Technical training

The specialists from our Technical Service provide practical training for your employees at the NETZSCH training centres, online or at your facility. This allows you to benefit from cost savings and increased pump efficiency and to avoid mistakes during commissioning, maintenance or repairs.



**More information on
our service and support
can be found here:**

The owner-managed NETZSCH Group is a leading global technology company specializing in mechanical, plant and instrument engineering.

Under the management of Erich NETZSCH B.V. & Co. Holding KG, the company consists of the three business units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems, which are geared towards specific industries and products. A worldwide sales and service network has guaranteed customer proximity and competent service since 1873.

The NETZSCH Business Unit Pumps & Systems offers NEMO® progressing cavity pumps, TORNADO® rotary lobe pumps, NOTOS® multi screw pumps, PERIPRO® peristaltic pumps, macerators/grinders, dosing technology and equipment that are custom built for challenging solutions for different applications globally.

Proven Excellence. ■

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