



SYSTEMATIC SUPPLY AND DISPOSAL

User-friendly service stations for
train care maintenance facilities

VOGELSANG – LEADING IN TECHNOLOGY



UNIQUE AND RELIABLE SUPPLY AND DISPOSAL

**Quality, experience and expertise
guarantee future-proof technology**

As the inventor of the elastomer-coated rotary lobe pump, technology leader Vogelsang has been one of the world's leading mechanical engineering companies in the pump sector for decades. Railway transport companies, bus companies and ports have been relying on our high-quality machines for years, especially thanks to the sophisticated design of the rotary lobe pump.

Based on our wide-ranging experience and constant research, we not only develop extremely functional components and entire systems that ensure long-term, trouble-free and economical operation – they also have to be easy to handle. Both the production and the material quality of our machines are testimony to how seriously we take our responsibility to our customers. Their adaptability and changeability enhance efficiency, optimise performance and increase sustainability.

A sophisticated logistics system covering cleanliness, hygiene, wastewater disposal and freshwater supply is necessary to meet all the requirements for operating modern passenger trains. Vogelsang offers individual solutions for stationary service systems, starting with small ones (single point solutions) up to larger train treatment systems (multi-point systems).



THE ALL-IN-ONE SOLUTION

Standalone systems – Special wastewater disposal systems for for small train care depots and service stations

The compact systems equipped with rotary lobe pumps from Vogelsang cover the whole scope of wastewater disposal and fresh water supply. The standalone systems can be installed directly on the service platform and all have integrated water and wastewater connectors. An optional heating system and thermal insulation down to temperatures of $-25\text{ }^{\circ}\text{C}$ ensures continued operation when temperatures drop.

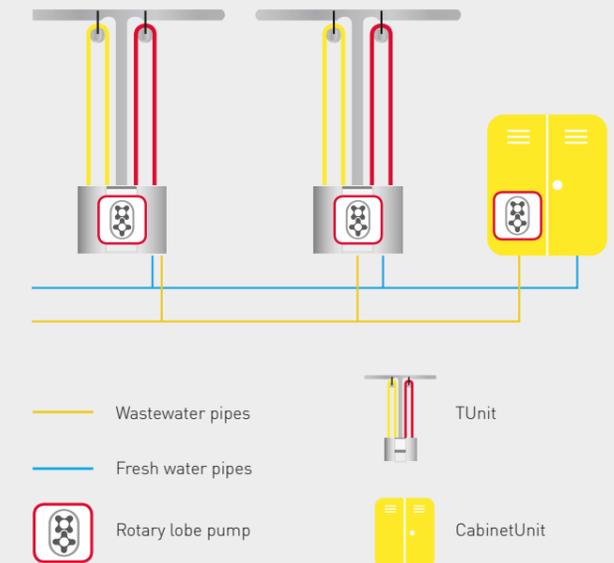
TUnit SP

The vacuum and water hoses are mounted to a T-shaped mast at the TUnit SP service point. The automatic hose retraction mechanism guarantees the maximum usage range and keeps the hoses manageable. The time-controlled hygienic rinsing makes sure that the fresh water facilities are cleaned regularly. The integrated pump of the TUnit SP can also operate an additional satellite module.

CabinetUnit SP

The CabinetUnit is an integrated supply and disposal station with a modular cabinet design. It is especially well-suited for smaller rail treatment systems, workshops and service stations. It also has an automatic hose retraction function, hygienic rinsing and a water stop function. It can be accessed from both sides of the platform, so it's particularly useful in narrow spaces.

Single point solution



The CabinetUnit SP is available in three models:

- **A2 model**
Wastewater disposal and fresh water supply
- **B2 model**
With integrated cleaners compartment incl. cleaning agent dosing equipment for cleaning the train interior
- **C2 model**
With storage space and cleaners compartment incl. cleaning agent dosing equipment for cleaning the train interior

Custom equipment with bioreactor cleaning function can also be provided upon request.

Advantages of the single point solution

- Compact: Integrated supply and disposal
- Saves time (in the case of the TUnit SP, through full automatic valves)
- Ergonomic design
- Better system availability because of integrated interfaces to monitor the systems



MULTITASKING WONDER

Multi-point supply and disposal systems: Central systems for medium to large scale depots

Multi-point systems consist of at least one central pumping unit and multiple service stations. The size and structure of a multi-point system can be customised based on how frequented the system is, its technical requirements and the service processes.

The system can be equipped with dozens of TUnit systems, CabinetUnits and more with just one central pump station, allowing the service team to perform as highly and quickly as possible. The multiple-station systems can also be customised for different toilet systems. This means that wastewater tanks with water flushing can be covered alongside chemical toilet systems.

A particularly special feature of the multi-point system is the fail-safe pump that is at the heart of every system. Our systems are fitted with a Vogelsang rotary lobe pump that has been specially developed for viscous and contaminated media. The VacUnit vacuum pump station has proven itself in this area for decades. As a double pump station, the VacUnit pump unit ensures that operation continues if one pump unit requires servicing.

Multi-point systems can be expanded by different options, including automatic monitoring of the operating status and of the individual components such as flow control sensors and fully automatic valves. Additional depot equipment such as rail heating and brake testing systems can also be integrated and monitored with the VEBSys system. The highly-compatible web-based control applications VEBSys allows operating data of all the systems connected to the program to be accessed from anywhere. That makes sure that they are ready for operation, and it can also be used for quality control.



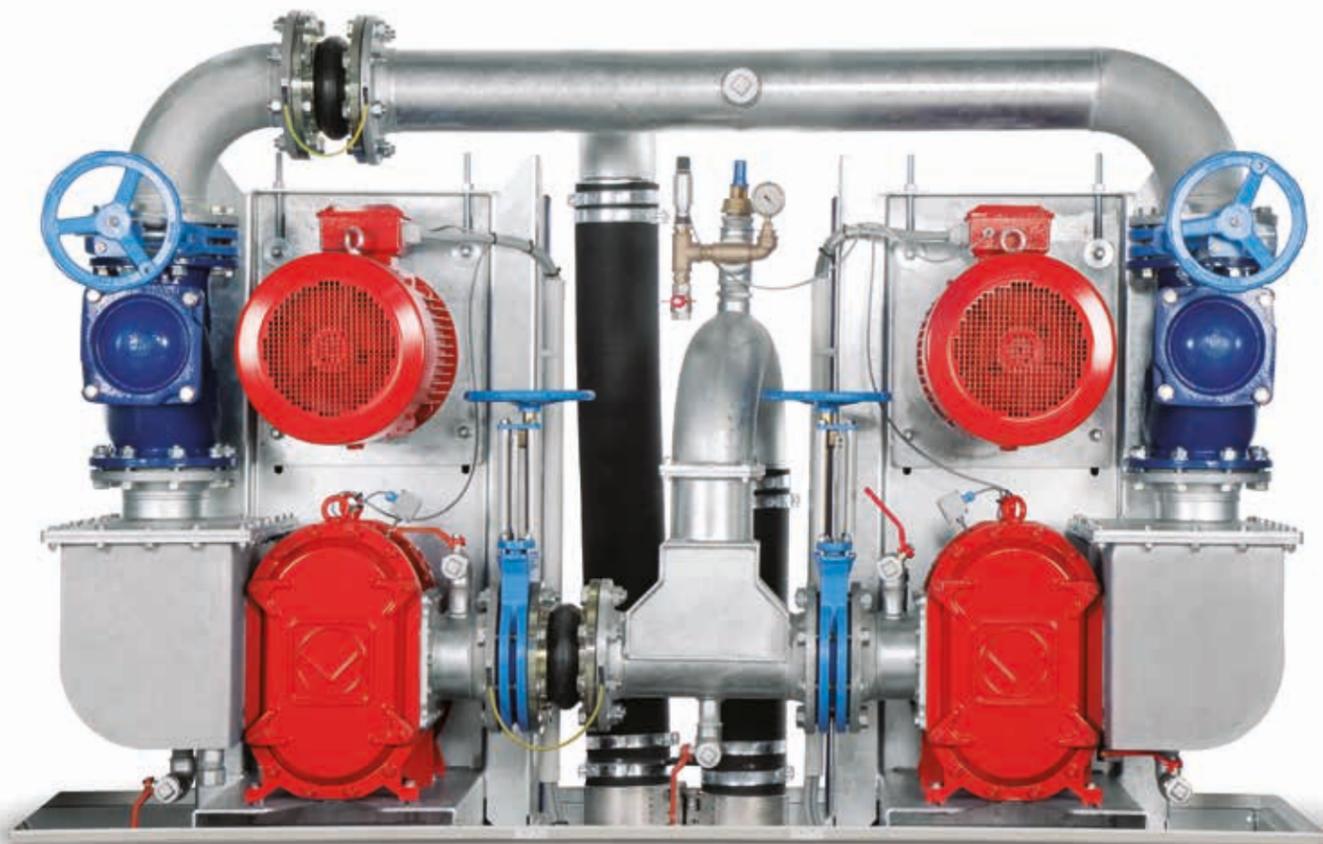
Vogelsang's particularly compact TUnits are fitted with an automatic hose retraction system, making the work of service personnel so much easier.



Compact inner workings: Pump technology makes wastewater disposal from the on-board toilet fast and reliable.

DIRECT VACUUM – GREATER OPERATIONAL READINESS

The VacUnit double pump station:
Compact and reliable pumping
station for wastewater disposal



Vogelsang VacUnit

Whether you need a mobile or stationary single point system or a complete vacuum disposal network: All Vogelsang disposal systems are uniquely designed.

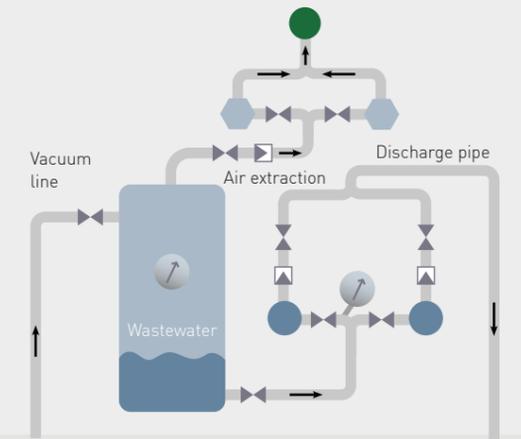
As the central pump station, the VacUnit guarantees the necessary suction for wastewater transport in closed vacuum line systems. The vacuum is generated directly by the integrated and proven Vogelsang VX rotary lobe pumps. The pump generates a vacuum of -0.6 bar even over large distances and pumps the wastewater directly into the sewage system. This means that the system can run smoothly with central controls, fewer components and smaller dimensions. The quick service design allows easy and comfortable access to the main components. It can be inspected and maintained quickly and easily, meaning fewer system stoppages. The outcome: high availability and low-intensity maintenance.

The VacUnit pump station is available in different mounting designs:

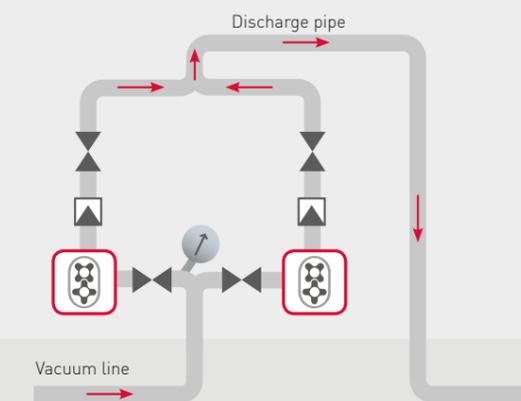
- in a compact cabinet for outdoor and platform-side installations
- in a system container with storage space for further components
- as a system without a cabinet to install in a plant room or as an underground assembly

Output:

- With a single pump station, capacity of 60 – 300 m³/h
- With a double pump station, capacity of 2 x 60 – 300m³/h
- Available motor output of 7.5 – 30 KW



Conventional vacuum pumping station



Vogelsang VacUnit DP double pump station

Thanks to fewer components with smaller dimensions, the Vogelsang double pump station is a smooth-running system. Its design makes it easy to service with high availability.

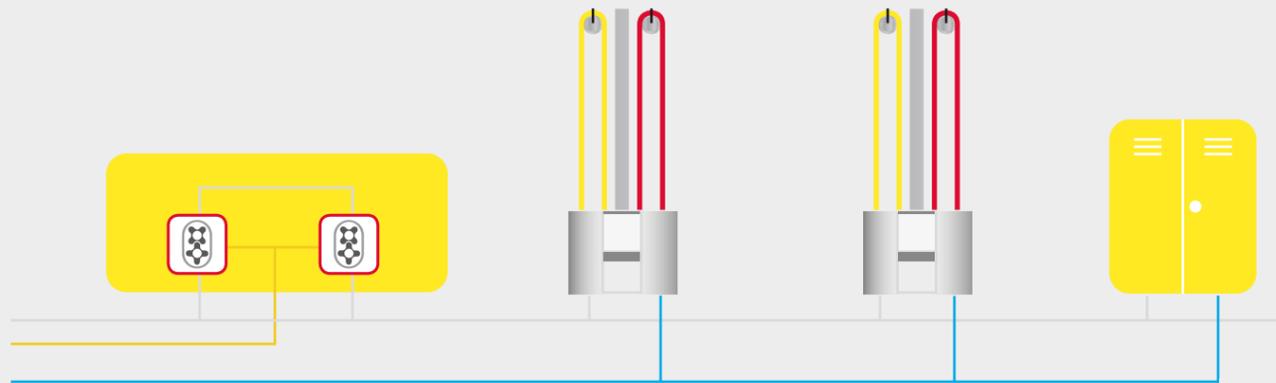
	Rotary lobe pump		Wastewater pump		Slide valve
	Vacuum pump		Biofilter		Check valve
			Vacuum measurement		

Advantages of the VacUnit

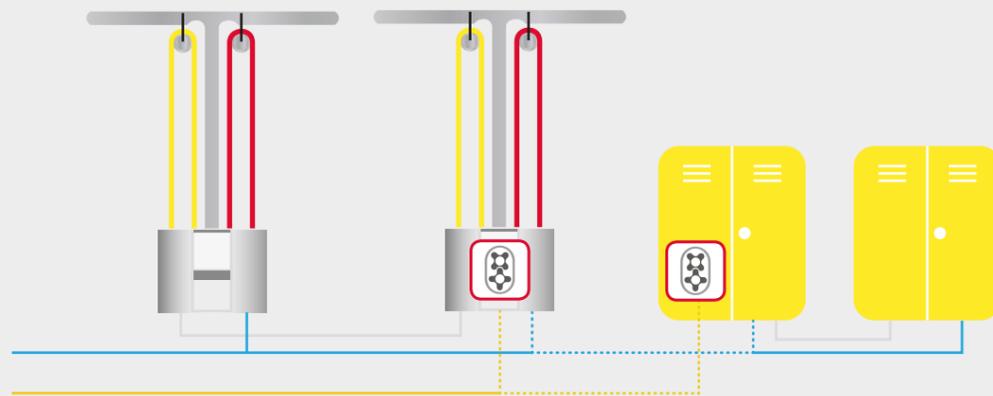
- Higher availability through duty /standby & assist pump installation
- Insensitive to foreign matter and clogging
- Central control
- No bulky vacuum reservoir tanks
- Vacuum generation and wastewater transport with the same pump unit
- Low susceptibility to failure because it has fewer component
- Takes up less space thanks to its compact design

Multi-point systems and combination of single point solutions and multi-point systems

Multi-point systems



Combination of single point solutions and multi-point systems

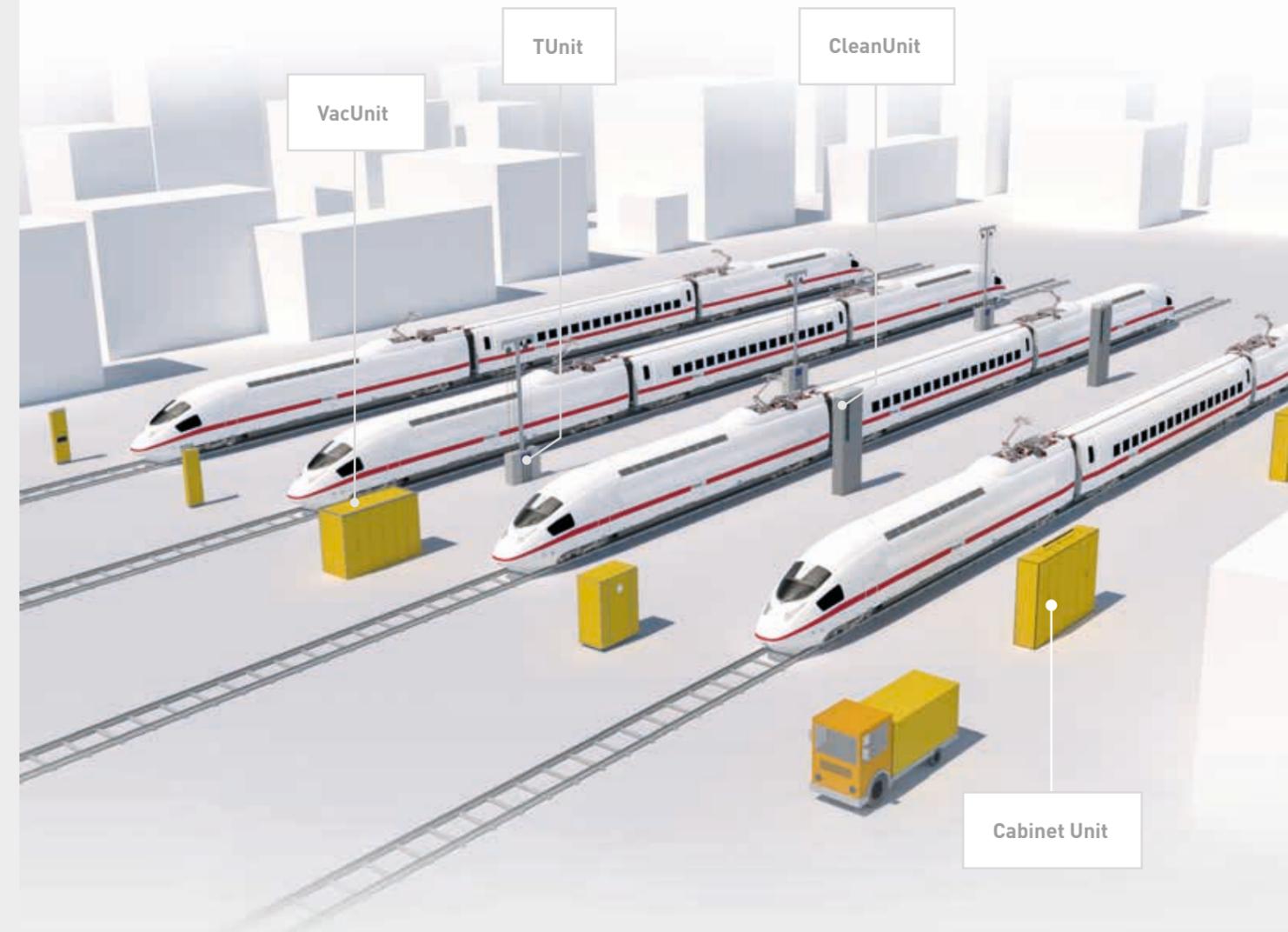


- Wastewater pipes
- Fresh water pipes
- Vacuum line
- Rotary lobe pump
- TUnit
- CabinetUnit

Depending on the factors such as the service life daily vehicle throughput, quantity and position of the on-board toilets, as well as the fleet size, individual solutions can be planned for the highest economic efficiency.

Train Care Maintenance Facilities

Typical use of highly frequented multi-point systems with high traffic volume and simultaneous operation of multiple supply and disposal systems as well as internal cleaning platforms for long train formations



FLEXIBLE FOUNDATION WITH A FIXED LOCATION

The in-ground base

The installation of a CabinetUnit, TUnit or other service modules must be well planned. It is necessary to set up wastewater and fresh water pipes that need to be taken into consideration when building the foundation. To minimise this time-consuming and complicated effort, Vogelsang offers a in-ground base. This prefabricated installation base with integrated supply and disposal connectors can be installed right into the ground. After that, the system can be placed right on and connected right to the base. This means no concrete works, quicker installation, branch pipe work always in correct position. The optional integrated wastewater collection and vacuum discharge unit eliminates the need for conventional drainage by gravity and wastewater lifting systems.



Advantages of the in-ground base

- Saves time and money compared to conventional designs
- No concrete work required
- Easy to set up and install
- Less excavation works
- Re-usable in-ground base

THE HEART OF THE WASTEWATER DISPOSAL SYSTEM

Vogelsang rotary lobe pumps: the most efficient choice for vacuum pumping stations

Technology needs to be easy to use and always accessible. The heart of our disposal systems is the original Vogelsang rotary lobe pump: a self-priming positive displacement pump specially designed for viscous media and liquids contaminated with foreign matter. The medium is sucked in directly by the highly robust, elastomer-coated rotary lobes and pumped into the sewer system.

Vogelsang pumps for the railway sector use robust two wing rotary lobes. They have a special coating and maximised free passage, which is why they are particularly insensitive to foreign matter such as rags and sanitary products. Thanks to the VX design, all wear parts can be serviced without having to disassemble the pump. That minimises maintenance time and costs. The simple and reliable Vogelsang rotary lobe pump is ready for use around the clock and reduces downtime to a minimum.

The principle

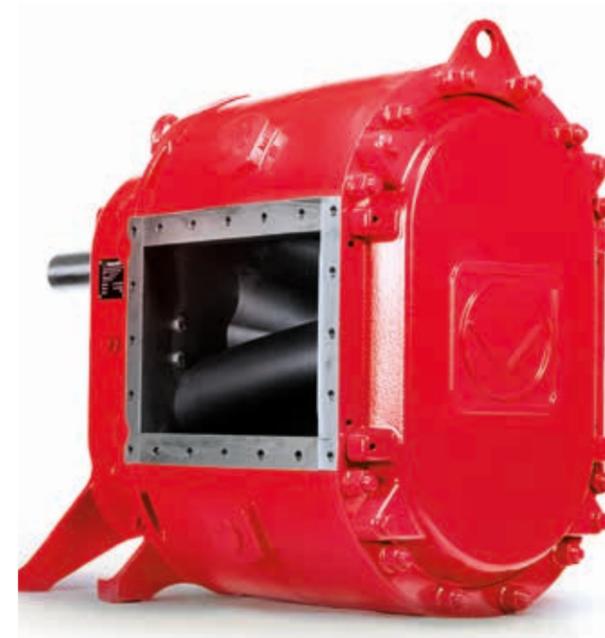
Vogelsang rotary lobe pumps are non-contact, rotating positive displacement pumps. The delivery rate increases in proportion to the speed, so that Vogelsang rotary lobe pumps have proven to be an efficient choice for a wide variety of delivery tasks. Their unique design also makes them easy to handle and economical to operate.

Practical, economical and service-friendly

Vogelsang pumps are easy to operate, maintain and service. This minimises downtime, ensures high availability and, above all, reduces operating costs.

Advantages of Vogelsang pumps

- Simple maintenance and fast service on-premises because the pumping chamber can be easily accessed by removing the cover
- Reliable operation thanks to high efficiency
- Comprehensive range of features and options
- Self-priming, resistant to dry running and foreign matter
- Long service life



Service- and maintenance-friendly: the VX-series rotary lobe pumps

What we offer

We provide solutions in the following sectors:
AGRICULTURAL TECHNOLOGY, BIOGAS,
INDUSTRY, TRANSPORTATION, WASTEWATER



Our broad range of products and services

- Consulting and service
- Data management and control technology
- Disintegration technology
- Individually tailored solutions for special applications
- Pumps and pump systems
- Solid matter feeders
- Solids reduction, separators and mixers
- Spreading technology
- Supply, disposal and cleaning

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