



**SST SLUDGE SCREW THICKENER**  
**FOR USE IN WASTEWATER, INDUSTRIAL AND**  
**AGRICULTURAL APPLICATIONS**

# BENEFITS AT A GLANCE

## SST AS A CENTRAL COMPONENT IN SLUDGE TREATMENT

Our Sludge Screw Thickener (SST) offers an optimal solution for increasing the total solids percentage of sludge, manure, and digestate in municipal and industrial applications. After the addition of a polymer solution, the sludge is separated in the machine into a low solids liquid filtrate and a nutrient-rich high solids cake.

With the use of thickened sludge in anaerobic digestion facilities, the total solids percentage in the digester, and thus the solids retention time, can be increased substantially. The result is significantly increased biogas production.

Slotted screen basket segments are installed in the de-watering zone of the machine. A range of slot widths for these baskets can be selected and combined in order to achieve optimal solids capture, throughput, and cake dryness depending on the application.

Our durable and easy-to-operate SST sludge thickener is available in two sizes and stands out due to its continuous operation modes, low maintenance costs, and low energy consumption. In order to keep design and installation costs low, we offer the complete drainage system as an optional pre-assembled package solution.

### PRODUCTIVE:

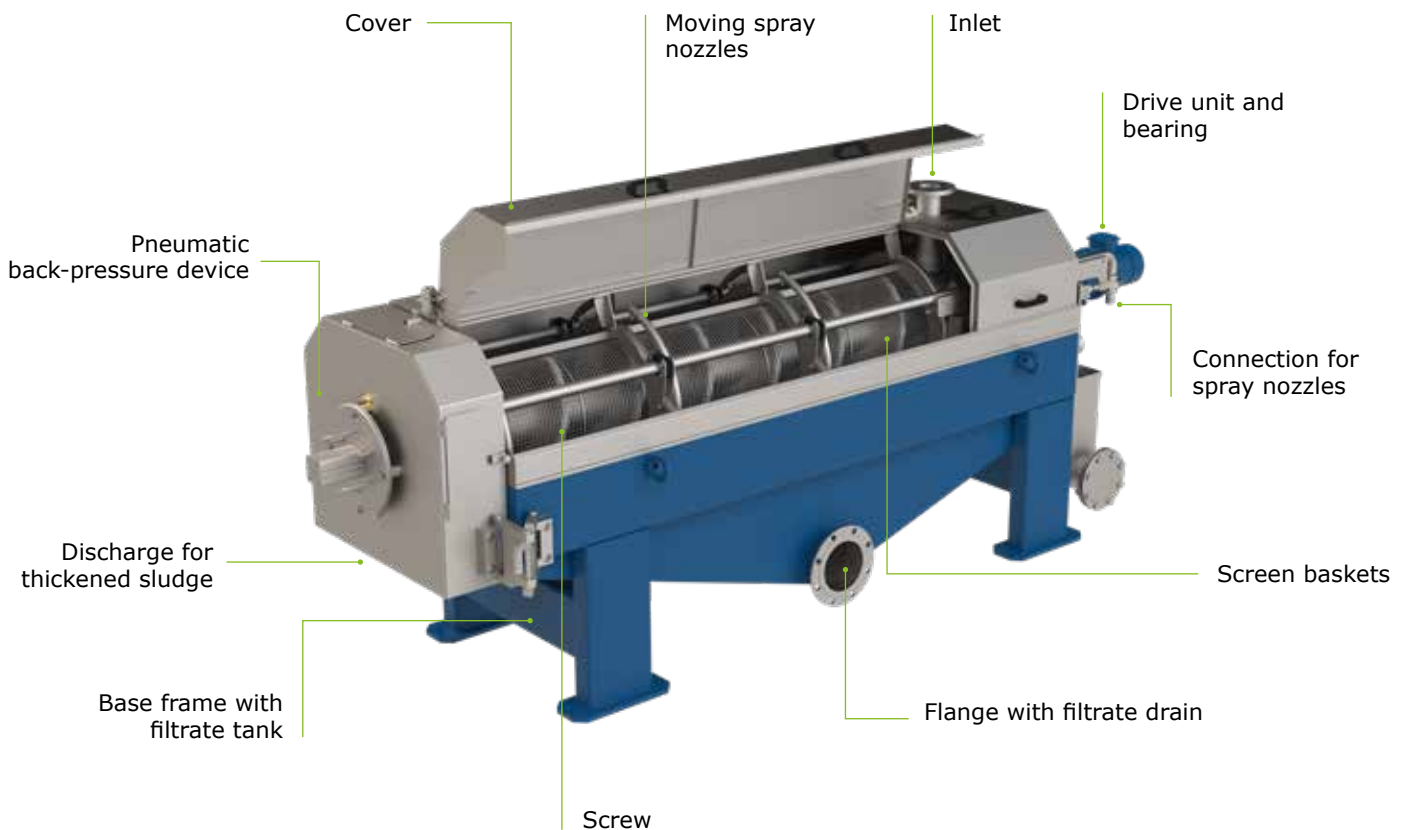
High separation and thickening performance with very low energy consumption

### EFFICIENT:

Reduction of digestate volume, increase in biogas production

### FRUGAL:

Low wear and maintenance costs, reduced polymer consumption with dynamic inline mixer



### QUIET & CLEAN:

Minimal noise and odour

### FLEXIBLE:

Adaptation to various media and conditions is possible

### INTELLIGENT:

Fully-automatic continuous operation

# THICKEN. SEPARATE. FILTER.

## SLUDGE THICKENER

### **RUNS AND RUNS AND RUNS**

- » Throughput of up to 18m<sup>3</sup>/h or 700kg TS/h (SST 225) and up to 60m<sup>3</sup>/h or 2200kg TS/h (SST 400)
- » Continuous operation/high availability with non-clogging slotted screen baskets and uninterrupted cleaning process using an integrated spray cleaning system
- » Long service life with high-quality materials (all parts coming into contact are stainless steel) and robust design with maximum accuracy of fit

### **WELL-CONSIDERED DESIGN**

- » Innovative wipers prevent clogging of the screen slots and simultaneously function as wear protection for the screw flight
- » Pneumatically operating spray device with flat jet nozzles arranged in a circle around the screen area keep the screen baskets and machine free from stubborn fouling
- » High-quality bearing and seal unit protects gears from water penetration and damage due to axial forces
- » Closed housing (and connection for odour extraction) ensures hygienic operation, a clean machine environment, and the entrapment of odours

### **UNCOMPLICATED COMMISSIONING & MAINTENANCE**

- » Simple installation is possible with the delivery of pre-assembled skids that include the feed pump, polymer mixer, filtrate pump, and fully-automatic controls
- » Filtrate tank with connection points integrated in the frame for the pump and level sensor
- » Large, easy-to-open doors give quick access to the screen surface for inspection and cleaning (with additional maintenance hatches for the SST 400)
- » Rotating screen press housing (only SST 225) enables quick access to the screen and screw

### **EXPERIENCE FLEXIBILITY**

- » Interchangeable slotted screen segments enable adaptation of the thickening performance for various media (process optimization)
- » Polymerization reactor (optional) and/or dynamic inline mixer (optional) for reliable and efficient flocculation can be integrated in the supply of the machine
- » Total solids percentage of cake is adjustable with pneumatic back-pressure device

### **EFFICIENT USE OF RESOURCES**

- » Low water consumption for cleaning
- » Very low energy consumption and noise level, as well as minimal spatial requirement thanks to a compact design
- » Extremely low-wear and vibration-free system due to low rotational speed of the screw
- » High solids separation rates (TSS\* >90%) and substantially more efficient thickening than with a drum-type thickener

\* Total Suspended Solids

# EXPERIENCED SLUDGE PREPARATION

## HOW OUR SST WORKS

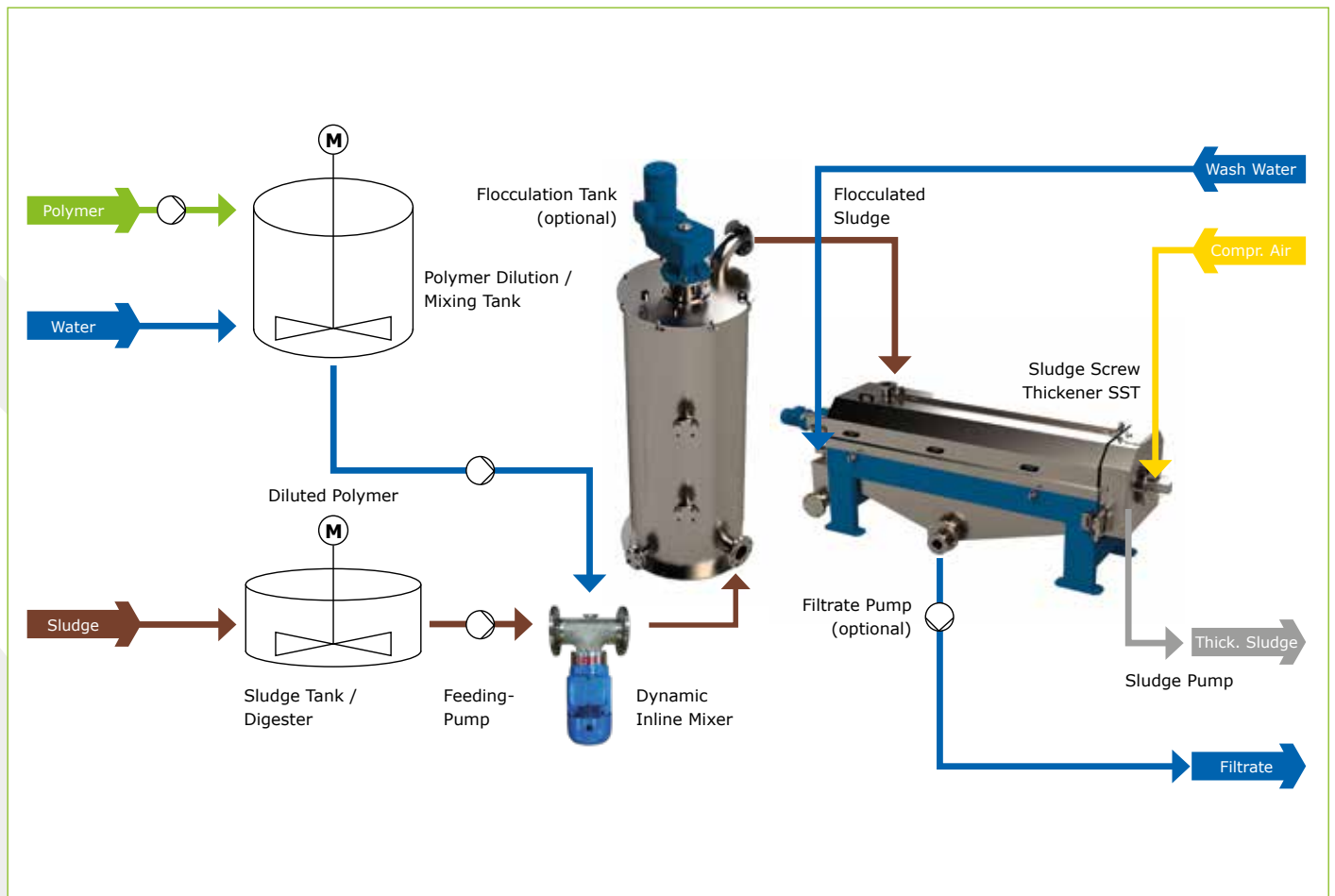
A diluted polymer solution is added to the supply line of the feed sludge via a dynamic inline mixer or a polymerization reactor. Then the conditioned sludge passes through the inlet of the unit.

With the aid of gravity and our slowly rotating screw with variable speed, the sludge is advanced to a cylindrical filter screen basket. The water released in the process is then filtered through the slots in the screen and flows to the filtrate tank below. The solids remaining on the interior surface of the screen are advanced by the wipers to the pressing section of the machine and slowly thickened.

The volume of the channel in the pressing zone decreases in the screw's auger duct, and as a result the sludge is increasingly compressed and dewatered. At the end, the thickened sludge is discharged through an annular gap against an adjustable pneumatic back-pressure device.

With automatically adjustable flushing intervals, the exterior surface of the screen is cleaned by a spraying device with flat jet nozzles arranged in a circle.

The flow diagram below shows the individual steps of our preparation technology:



# EXAMPLE SST INSTALLATION

## THICKEN SLUDGE EASILY

Our SST sludge thickener for throughputs of up to 100m<sup>3</sup>/h is characterized by an especially robust design. We can combine modular elements with the appropriate skids and deliver a fully pre-assembled unit.

In the process, we assemble and connect the pipelines of the core components (such as the SST, dynamic inline mixer and polymerization reactor) on a single frame. All interfaces for material flow and supply lines are arranged on the exterior for easy accessibility.

The skid can also be optionally expanded with pumps for the polymer, filtrate, and thickened cake. All components can be operated via an optionally integrated, fully-automatic control unit that can be delivered pre-assembled and connected on the frame.

Feel free to contact us about a complete system adapted to your requirements, which you can easily commission on-site.



## OUR ANAERGIA TECHNOLOGIES

We offer solutions for the following applications:

- » Pump Technology
- » Mixing Technology
- » Separation
- » Extrusion Technology
- » Screening & Sorting
- » Size Reduction
- » Organic Polishing
- » Conveyor Technology



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