



Sludge Screw Thickener

SST

The SST increases the solids content of digestate, enabling high-solids digestion and increased biogas production in existing digesters. The innovative design allows for continuous operation and minimizes both maintenance and power consumption.

Increase Capacity with sludge thickening

Overview

The SST enables high solids digestion by thickening digester solids and returning them to the digester. The liquid fraction, which is extremely low in suspended solids, is rejected and can be sent to headworks for treatment. Removing the liquid fraction of digestate frees space for solids loading, and digester capacity is increased.

The SST's robust design allows for long operation times, minimal maintenance, and extremely low power consumption.



Low solids filtrate (left) is removed from digestate (right) while concentrated cake is returned to the digester.

Process

1. Digester sludge is fed to the SST for thickening.
2. The liquid fraction of the sludge, or filtrate, is removed.
3. The solids fraction is pressed out of the SST as a cake and returned to the digester.

Applications

- **Anaerobic Digestion:** Recuperative thickening enables high-solids digestion and increased biogas production.
- **Municipal Sludge:** Thicken municipal sludge to reduce volume.
- **Agricultural:** Thicken manure to reduce volume for hauling, composting, and land application.

Advantages

- Reduced risk of screen blockage
- Integrated spray cleaning system for easy maintenance
- Adjustable cake dryness
- Slow rotation speed minimizes maintenance
- Continuous operation and long duty cycles
- Low energy consumption, often 90% less than traditional decanters or centrifuges
- Increases existing digester capacity

