

# PSM Smart Mixing System

Powerful, gearless direct drive motor combined with a dynamic mixer controller delivers an innovative mixing system that achieves the highest mixing performance in the market

## KEY BENEFITS

- **EFFICIENT** — Low energy, 6 kW draw. Connected load of 12.5 kW
- **POWERFUL** — Highest thrust mixer on the market, delivering 30,000 GPM of flow — More flow in 1 minute than most pump mixers deliver in 1 hour
- **VERSATILE** — Doesn't let increased solids and changing feedstocks impact mixing — Effectively mixes material from ~1% TS to ~15% TS
- **ROBUST** — Backwards sweeping sickle-shaped propeller prevents rags or fibers from snagging on the propeller
- **DYNAMIC** — Easy adjustment of mixer height, direction, and speed to break up floating layers and resuspend grit
- **RELIABLE** — Gas curtain-fitted service boxes enable servicing without taking digester offline and multiple mixer configuration reduces single points of failure
- **HIGH-PERFORMING** — Enhanced mixing performance increases volatile solids reduction, benefitting biogas production and biosolids management

**Anaergia's PSM Smart Mixing System** is a breakthrough high-solids mixing solution which consists of advanced Permanent Synchronous Motor (PSM) mixers and a patented service box. This proven technology is deployed globally, including **hundreds of installations** in Europe and North America.

**Unparalleled Operational Flexibility:** Anaergia's intelligent mixing system offers full control by allowing operators to handle a range of operating scenarios by moving the mixer placement, changing direction and speed of rotation. Mixers can be easily accessed for maintenance and inspection without shutting down digesters.

**Unique and Robust Design:** Real-time, automatic mixer speed control avoids cavitation and abrasion. Designed to prevent ragging and available in stainless-steel options for corrosive environment applications.

**High Solids Mixers:** PSM mixers are efficient and reliable. They are used in feedstock buffer tanks and digesters handling up to 15% solids. With a propeller design that reduces ragging, a direct-drive motor that provides high efficiency, and intelligent controls that maintain constant torque. The PSM mixers minimize energy consumption, wear & tear, and operating costs.

**Service Boxes:** Allow easy adjustment of mixer height and direction to break up floating layers and resuspend grit while offering quick access for inspection and maintenance while the digester remains in service.

**Flexible Deployment** including fixed roofs (steel or concrete) membrane covers, geodesic domes, no roof, retrofits, and new build.

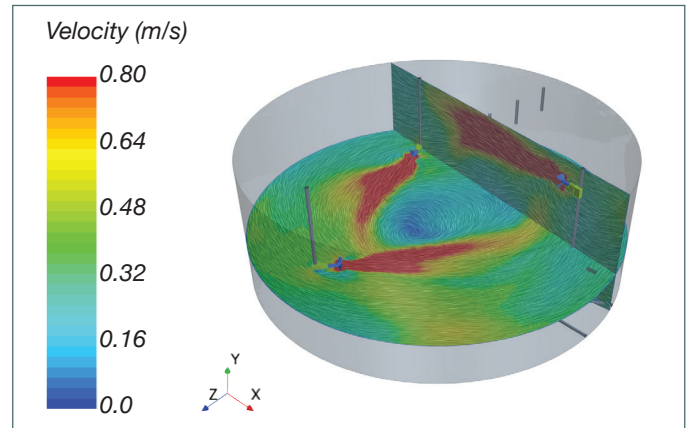
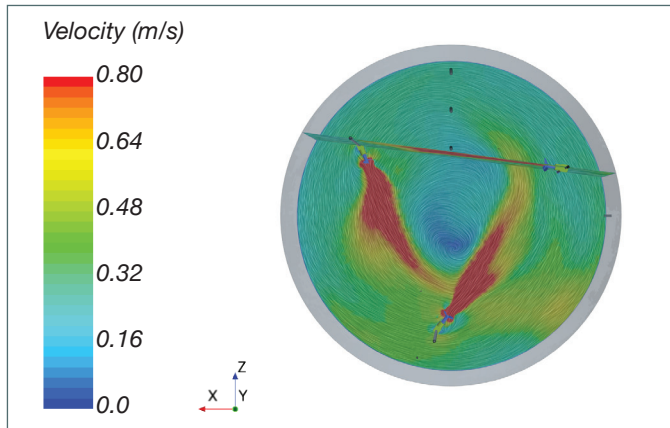
With the SMART dynamic mixer control system and a gearless motor, Anaergia's electric drive mixers can reliably and efficiently mix both high and low viscosity fluids, using similar high efficiency motors to those found in high performance electric cars.

**The PSM mixer is effective and maintains its energy efficiency advantage in the most demanding applications:**

- Sludge or food waste storage tanks
- Digesters and digestate storage tanks
- Anoxic tanks
- Other wastewater applications

## Eliminate Dead Zones

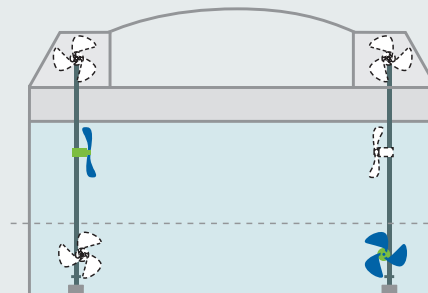
Redefining Mixer Performance by Achieving  $>0.3\text{ft/s}$  ( $0.1\text{ m/s}$ ) in Over 90% of Tank Volume



3 mixers operating on 2% TS food waste digestate in a 0.77Mgal tank in California



**Engineered for Highest Performance, Flexibility, and Operational Reliability**



Access for operation and maintenance

Break up floating layers

Suspend and remove grit