



WE SOLVE & MOVE.

Agitators for biogas - our service range



AGITATORS FOR BIOGAS

Thanks to our years of experience, as the first inventor and manufacturer of the electric mixer, we have accumulated a great deal of know-how and have been able to continuously optimize our products.

Our biogas mixers are specially designed for use in fermenter, secondary fermenter, digestate tanks as well as pre-pits and hydrolysis. This enables us to guarantee you optimum homogenization of the substrate for maximum gas yields.



Our propellers

The propeller affects the efficiency and outcome of the mixer more than any other component. However, depending on the tank, mixer location and substrate characteristics, the requirements for the propeller can vary significantly. We offer a wide range of types. So we can offer you the perfect solution for your application.

We develop and manufacture suction and push propellers as well as aerodynamically optimized high performance blades (HD+). Diameters from 8.5 in to 63 in and speeds from 1,750 rpm to 60 rpm allow specific configurations. All our mixer blades are precisely balanced. This ensures bearing friendly, energy saving operation.

The material of the propeller must be suitable for the pH value of the substrate. Depending on the aggressiveness of the medium, either steel, galvanized, painted, hardened, or stainless steel are suitable.

However, propellers are also wearing parts. This is why we design our propellers to be downward compatible. Your SUMA agitator can be retrofitted with a new propeller at any time.



Propeller LT 1400



Propeller XT 1200



Propeller XT 1600



Propeller
polymer coated



Propeller
spray coated

EFFECTIVE PROTECTION FROM ABRASION SUMA POM PROTECTION

Additional Protection

For added protection against long fiber foreign matter, we offer a polyoxymethylene (POM) abrasion protector. The POM protection prevents abrasion damage to the blade socket.

Easily mounted

The protective clamp is used for many SUMA rod agitators and submersible mixers. It can also be installed in existing systems. The POM can be installed in a few and simple work steps. The illustrated instruction is included in the delivery.



TANK TYPES



Closed
Tank



Tank concrete
Top



Open
Tank



Steel
Tank

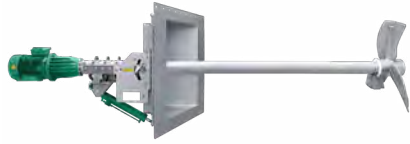


Open
Lagoon



Slalom
Channel

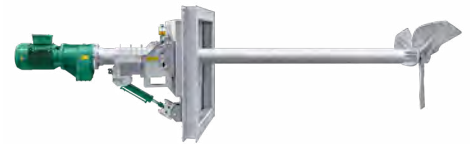
Rod agitators for the biogas sector



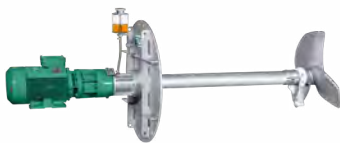
GIANTMIX FTX |
FTX Top mounting



GIANTMIX FT |
FT Top mounting



GIANTMIX AMX |
AMX Top mounting



GIANTMIX FR light



GIANTMIX FR SP



GIANTMIX FR 30°



GIANTMIX FR stationary



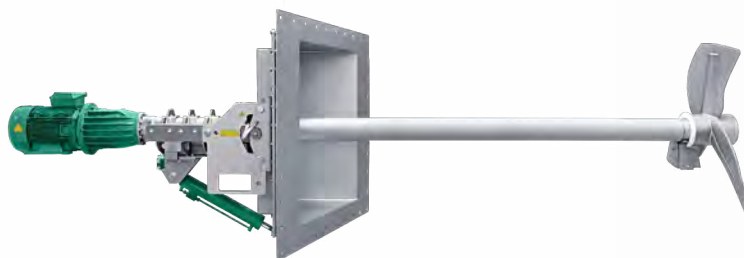
REKORDMIX



GIANTMIX BG2 |



GIANTMIX FTX | FTX top mount



| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|-------------|---------|----------------|--------------|
| FTX | 20 hp | 43 in | 160 rpm | 13.1 - 19.7 ft | 6.3 x 0.2 in |

GIANTMIX FTX

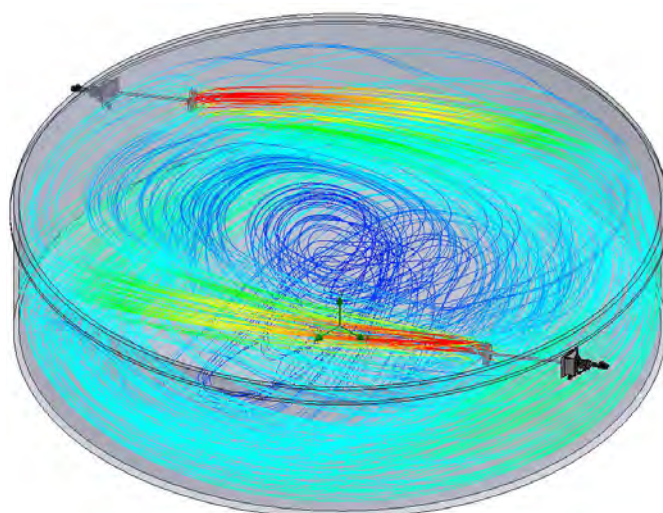
- For high viscosity substrates with dry matter content up to 15%
- Installation depth up to 26 ft below substrate level
- Hydraulic cylinder vertical tilt $+5^{\circ}$ / -30°

GIANTMIX FTX top mounting

- For high viscosity substrates with dry matter contents up to 15%
- For tank top installation



Application example



Stirring volume - 275,110 ft³



GIANTMIX FT

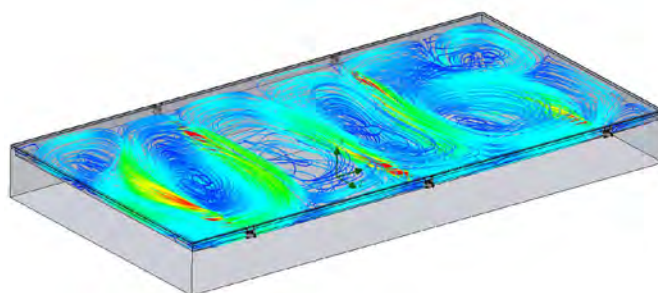


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|-------------|---------------|----------------------------|--------------|
| FT1 | 10 hp | 31.5 in | 240 rpm | 13.1 16.4 18 19.7 ft | 6.3 x 0.2 in |
| FT3 | 15 hp | 25 in | 330 rpm | 13.1 16.4 18 19.7 ft | 6.3 x 0.2 in |
| FT4 | 20 hp | 29 21 in | 330 480 rpm | 13.1 16.4 18 19.7 ft | 6.3 x 0.2 in |
| FT5 | 25 hp | 31 23 in | 330 480 rpm | 13.1 16.4 18 19.7 ft | 6.3 x 0.2 in |
| FT6 | 30 hp | 14 in | 480 rpm | 13.1 16.4 18 19.7 ft | 6.3 x 0.2 in |

- For dry matter content up to 14%
- Installation depth up to 26.3 ft below substrate level
- Horizontal adjustment up to $\pm 30^\circ$ by hand spindle
- Vertical adjustment up to $\pm 30^\circ$ by hydraulic cylinder



Application example



Stirring volume - 1,057,033 ft³

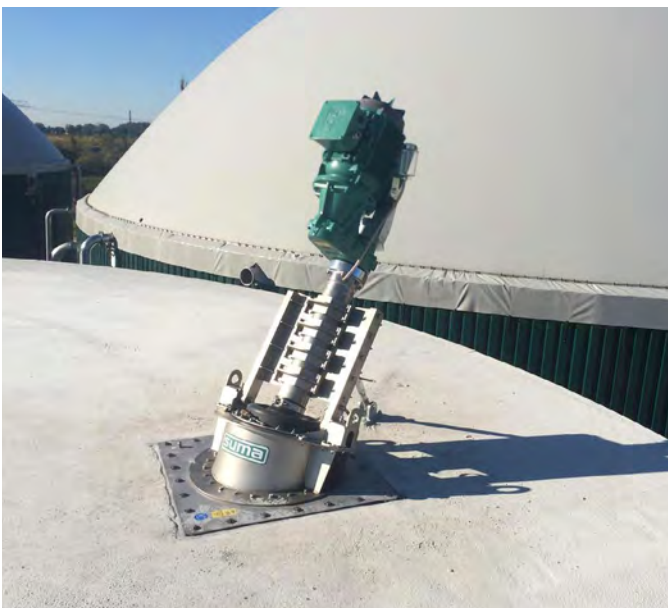


GIANTMIX FT top mounting

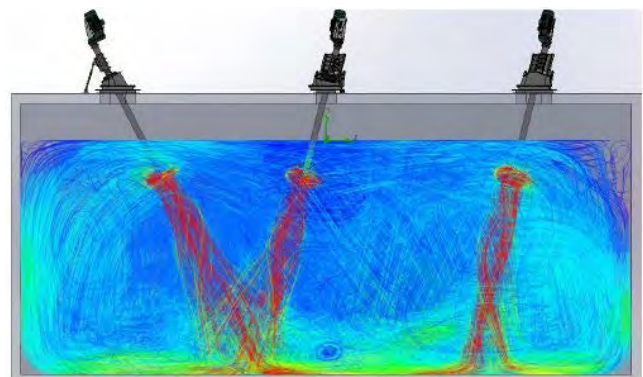


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|----------------|---------------|----------------------------|--------------|
| FT3 | 15 hp | 26 in | 330 rpm | 13 16.5 18.0 19.7 ft | 6.3 x 0.2 in |
| FT4 | 20 hp | 29.5 21.3 in | 330 480 rpm | 13 16.5 18.0 19.7 ft | 6.3 x 0.2 in |
| FT5 | 25 hp | 30.7 22.8 in | 330 480 rpm | 13 16.5 18.0 19.7 ft | 6.3 x 0.2 in |
| FT6 | 30 hp | 24.4 in | 480 rpm | 13 16.5 18.0 19.7 ft | 6.3 x 0.2 in |

- Designed for top of tank installation
- For dry matter content up to 14 %
- Low noise spur gear
- Oil expansion tank for lubrication and sea monitoring



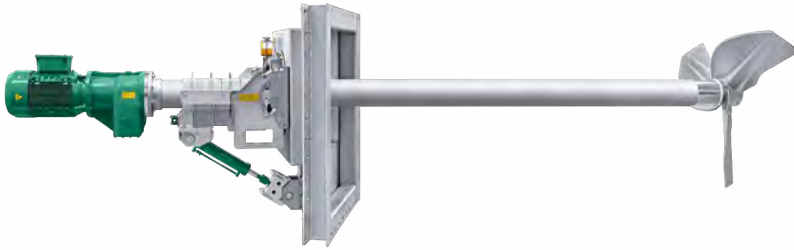
Application example



Stirring volume - 58,516 ft³



GIANTMIX AMX | AMX top mounting

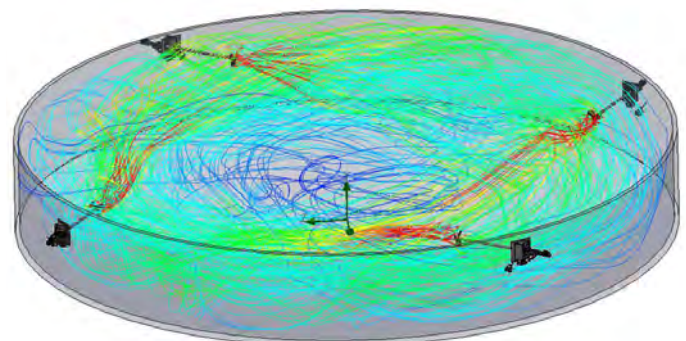


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|-------------|--------|---------------------|--------------|
| AMX5 | 25 hp | 63 in | 95 rpm | 13 16.5 19.7 ft | 8.7 x 0.3 in |
| AMX6 | 30 hp | 63 in | 95 rpm | 13 16.5 19.7 ft | 8.7 x 0.3 in |

- Specially designed for high viscosity substrates with high dry matter content up to 16%
- Installation depth up to 6 m below substrate level
- Vertical inclination by hydraulic cylinder +5° / -30°
- GIANTMIX AMX top mounting for installation on top of the tank



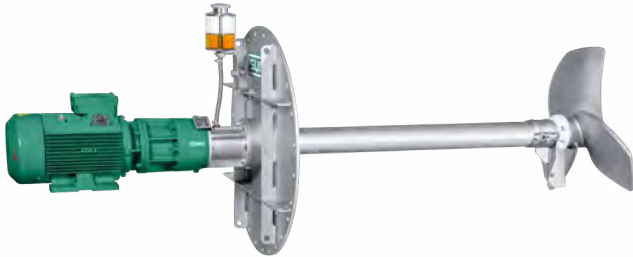
Application example



Stirring volume - 278,410 ft³



GIANTMIX FR light

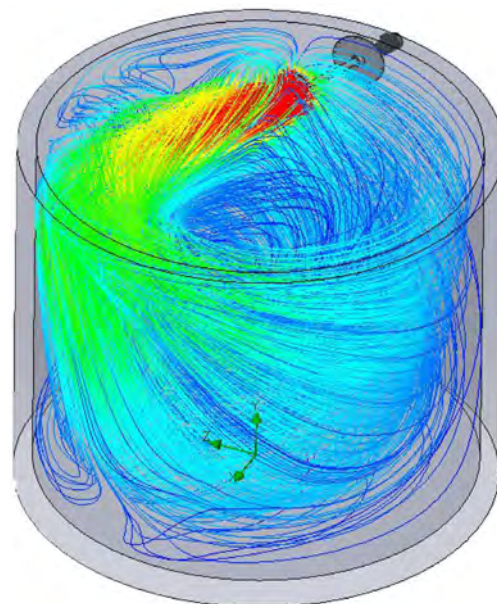


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|-----------|---------|-------------|---------|--------------|--------------|
| FR 40-220 | 5.4 hp | 25.2 in | 220 rpm | 3.0 5.0 ft | 4.0 x 0.2 in |
| FR 40-305 | 5.4 hp | 21.3 in | 305 rpm | 3.0 5.0 ft | 4.0 x 0.2 in |
| FR 75-330 | 10.0 hp | 24.4 in | 330 rpm | 3.0 5.0 ft | 4.0 x 0.2 in |
| FR 75-460 | 10.0 hp | 18.9 in | 460 rpm | 3.0 5.0 ft | 4.0 x 0.2 in |

- Designed for concrete or steel tanks with near constant substrate levels
- For dry matter content up to 12%
- Installation depth up to 19 ft below substrate level
- Easy installation and maintenance outside the tank
- Optionally available without motor and with PTO connection only



Application example



Stirring volume - 7.5 ft³



GIANTMIX FR SP

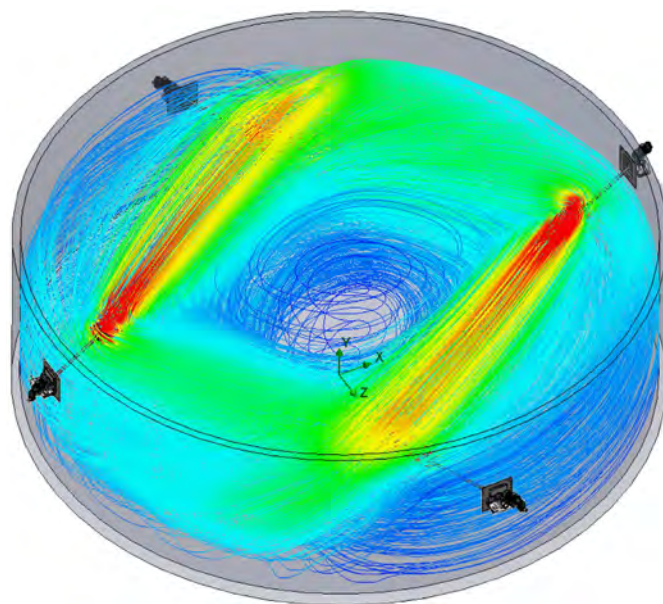


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|---------|-------------|---------|-------------|-------------|
| FR3 | 15.0 hp | 26.0 in | 330 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR4 | 20.0 hp | 29.5 in | 330 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR5 | 20.0 hp | 21.3 in | 480 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR6 | 25.0 hp | 22.8 in | 480 rpm | 9.8 13 ft | 4 x 0.15 in |

- Primarily for fermenters and final storage with near constant substrate levels
- For dry matter content up to 14%
- Installation depth up to 26 ft below substrate level
- Horizontally adjustable $\pm 25^\circ$
- Vertically adjustable $\pm 11^\circ$ through top link
optional $\pm 30^\circ$ by hydraulic cylinder or pinion rack
- Easy to install and service outside the tank



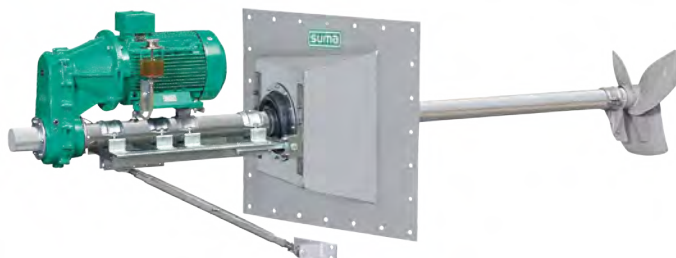
Application example



Stirring volume - 86,540 ft³



GIANTMIX FR 30°

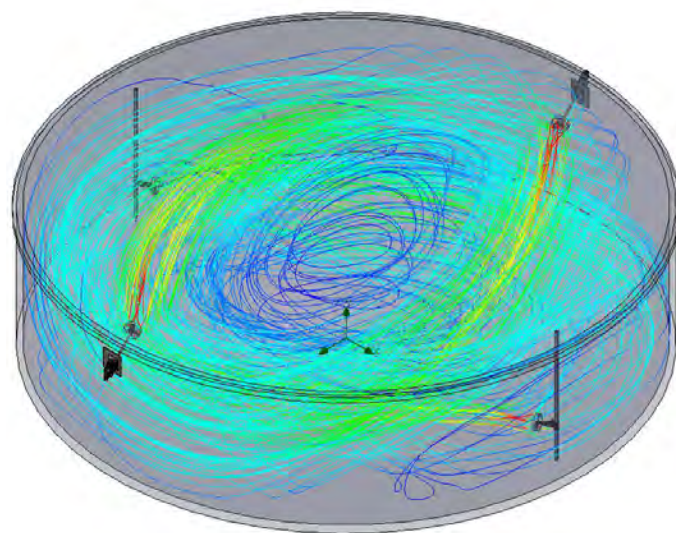


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|-------------|---------|-------------|-------------|
| FR3 | 15 hp | 26.0 in | 330 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR4 | 20 hp | 29.5 in | 330 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR5 | 20 hp | 21.3 in | 480 rpm | 9.8 13 ft | 4 x 0.15 in |
| FR6 | 25 hp | 22.8 in | 480 rpm | 9.8 13 ft | 4 x 0.15 in |

- Designed for fermenters and secondary fermenters with near constant substrate
- For dry matter content up to 14%
- Installation depth up to 5 ft below substrate level
- Vertical tilt $\pm 11^\circ$ with top link or optional $\pm 25^\circ$ with rack winch



Application example



Stirring volume - 199,887 ft³



GIANTMIX FR stationary

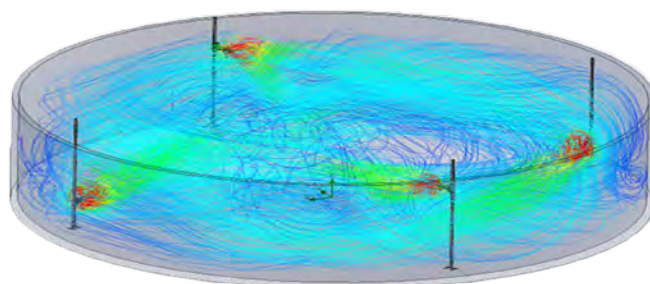


| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|------|-------|-------------|---------|--------------|----------------------|
| FR3 | 15 hp | 18.9 in | 480 rpm | 8.2 9.8 ft | 4.0 x 0.15 or 0.2 in |
| FR4 | 20 hp | 20.5 in | 480 rpm | 8.2 9.8 ft | 4.0 x 0.15 or 0.2 in |
| FR5 | 25 hp | 22.0 in | 480 rpm | 8.2 9.8 ft | 4.0 x 0.15 or 0.2 in |

- Comes with mounting bracket for the stationary installation
- For dry matter content up to 14%
- Installation depth up to 26 ft below substrate level



Application example



Stirring volume - 73,595 ft³



Rekordmix



| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|--------------|--------|-------------|-----------|---------------|----------------|
| Rekordmix L1 | 5.5 hp | 10.8 in | 1.150 rpm | 7.4 - 13.9 ft | 2.76 x 0.12 in |
| Rekordmix L2 | 7.0 hp | 9.8 in | 1.750 rpm | 7.4 - 13.9 ft | 2.76 x 0.12 in |

- Can be used in small tanks with low dry matter content of up to 8%
- Motor handle with handgrip
- Stub shaft with multiple bearings in oil bath
- Optional mobile version with trolley
- Optional tank wall mounting or opening through brackets for doweling or EB2 hanging rack



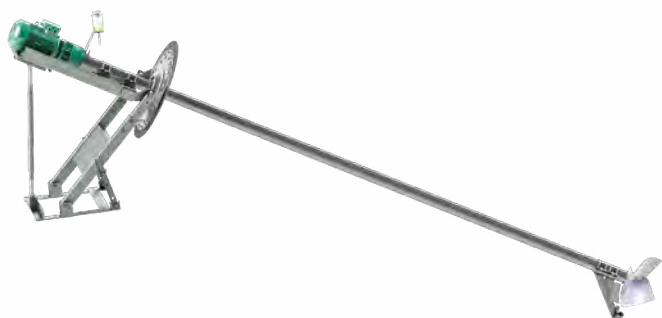
Application example



REKORDMIX with trolley



GIANTMIX BG2



| Type | Power | Ø Propeller | Speed | Tube length | Ø Tube |
|-----------|---------|----------------|---------------|--------------|------------|
| BG2 Top | 5.5 hp | 25.2 21.2 in | 220 305 rpm | 13 16.5 ft | 4 x 0.2 in |
| BG2 Top | 10.0 hp | 24.4 18.9 in | 330 460 rpm | 13 16.5 ft | 4 x 0.2 in |
| BG2 Top | 13.5 hp | 25.2 19.7 in | 330 460 rpm | 13 16.5 ft | 4 x 0.2 in |

GIANTMIX BG2

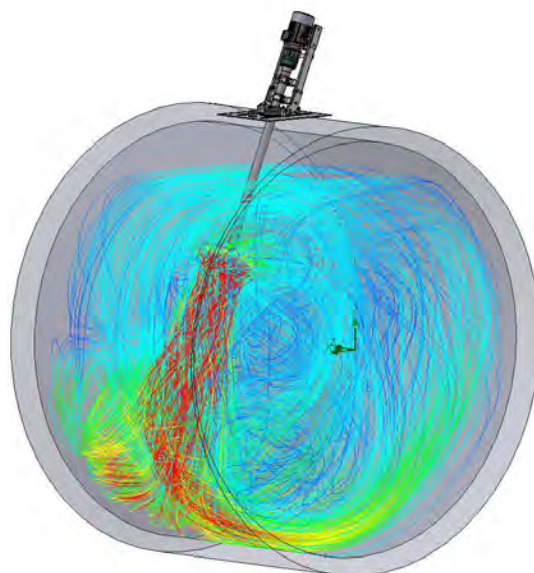
- Especially for lagoons
- For dry matter content up to 12%
- Vertical adjustment through top link
- Gas-tight lead through with EPDM diaphragm with ring flanges on the foil reduces the risk of cracking due to vibration

GIANTMIX BG2 top mounting

- For installation on top of concrete- and steel tanks
- For dry matter content up to 12%



Application example



Stirring volume - 2,080 ft³

Submersible agitators for the biogas sector



OPTIMIX 2G 3 | 4 kW



OPTIMIX 2A 3 | 4 kW



OPTIMIX 2G



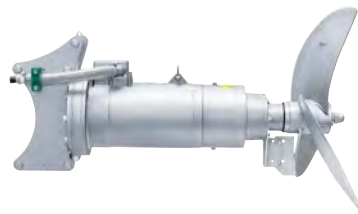
OPTIMIX 2A



OPTIMIX 2G 90-90



OPTIMIX 3G



OPTIMIX 3A



GDD



MGD



Suspension mounting
frame EV

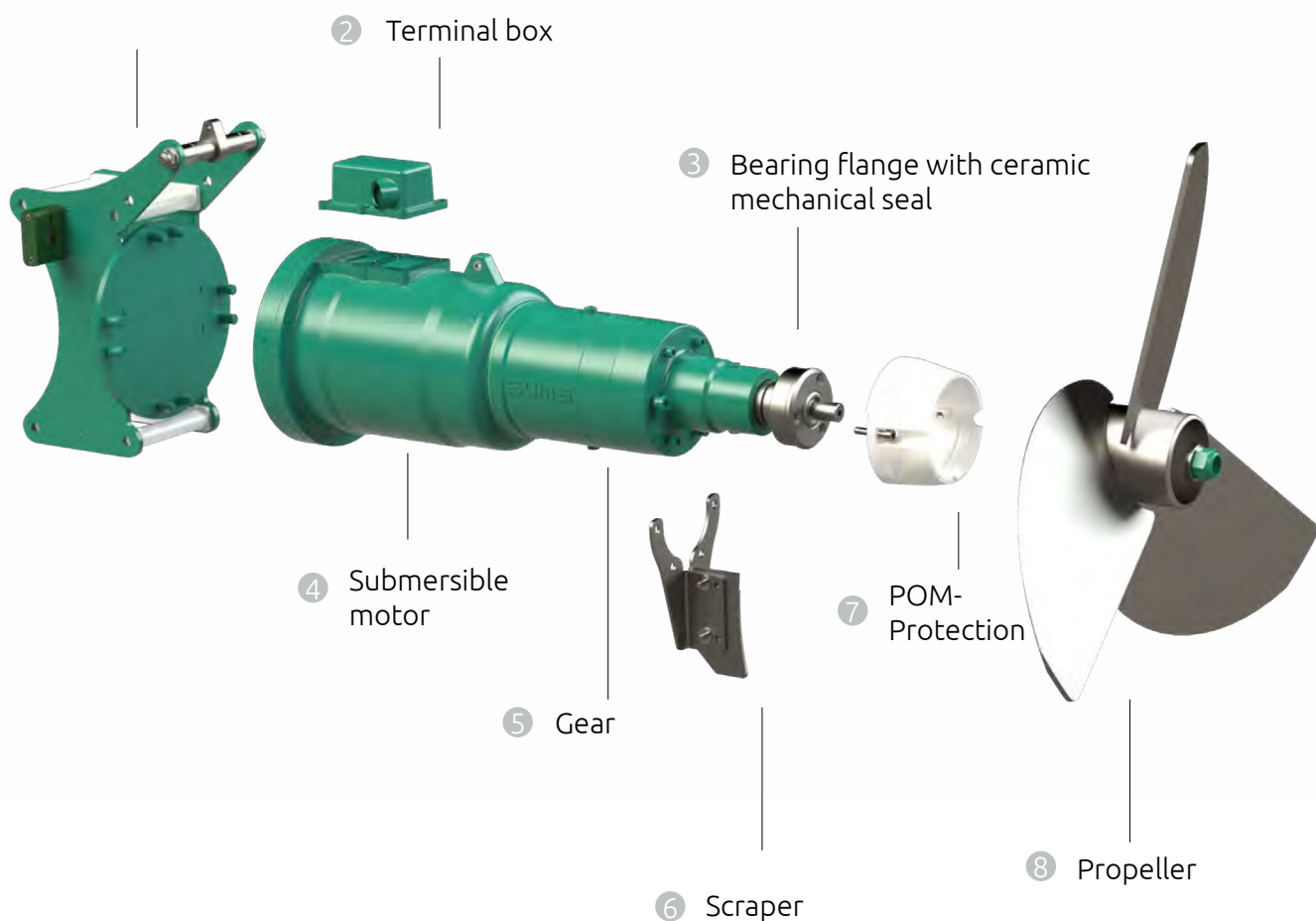
Submersible agitator OPTIMIX

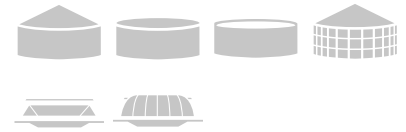
Thanks to our modular design, our submersible mixers can be customized in terms of motor power, gear-box, propeller and mast size. This allows us to provide you with a mixer that best suits your needs.

All our submersible mixers are suitable for substrate temperatures of up to 55°C and have separate oil chambers for motor, gear and bearing housing. Our special SUMA SiC/SiC mechanical seal seals the rotating shaft to the bearing flange and prevents substrate from entering the impeller blade bearing.

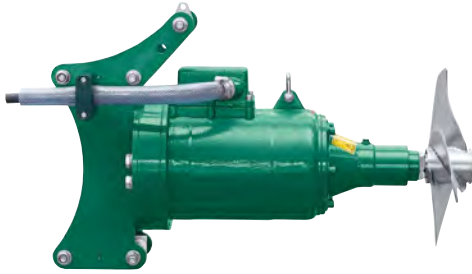
Microbe resistant cable is included as standard.

① 4-roller guide unit

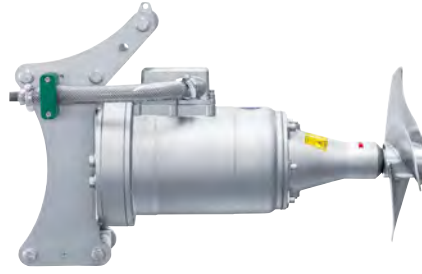




OPTIMIX 2G | 2A 4 / 5.5 hp



Cast iron housing



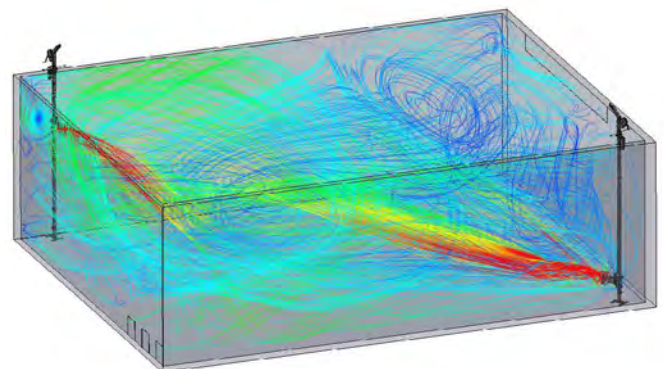
Stainless steel housing

| Type | Power | Ø Propeller | Speed |
|---------|--------|-------------|-----------|
| 2G 2A | 4 hp | 12.2 in | 870 rpm |
| 2G 2A | 5.5 hp | 8.5 in | 1,150 rpm |

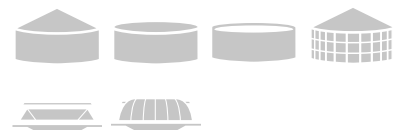
- Designed for smaller tanks
- For dry matter content up to 8%
- OPTIMIX 2A all stainless steel for aggressive low pH media



Application example



Stirring volume - 53,395 ft³



OPTIMIX 2G | 2A



Cast iron housing



Stainless steel housing

| Type | Power | Ø Propeller | Speed |
|---------|---------|----------------|---------------|
| 2G 2A | 5.5 hp | 8.5 in | 1,150 rpm |
| 2G 2A | 5.5 hp | 25.2 21.3 in | 220 305 rpm |
| 2G | 15.0 hp | 27.6 21.3 in | 330 460 rpm |
| 2G 2A | 12.0 hp | 25.2 19.7 in | 330 460 rpm |
| 2A | 18.0 hp | 29.5 22.8 in | 330 460 rpm |
| 2G | 20 hp | 29.5 22.8 mm | 325 460 rpm |

OPTIMIX 2G

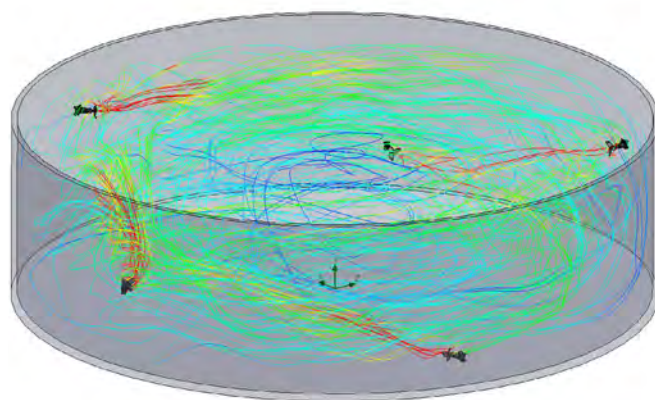
- For dry matter content up to 12%
- Optional direct rotor available

OPTIMIX 2A

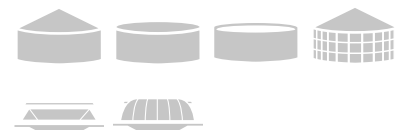
- For aggressive media with low pH values
- For dry matter content up to 12%
- OPTIMIX 2A 18.0 hp approved for Ex zone 1



Application example



Stirring volume - 506,235 ft³

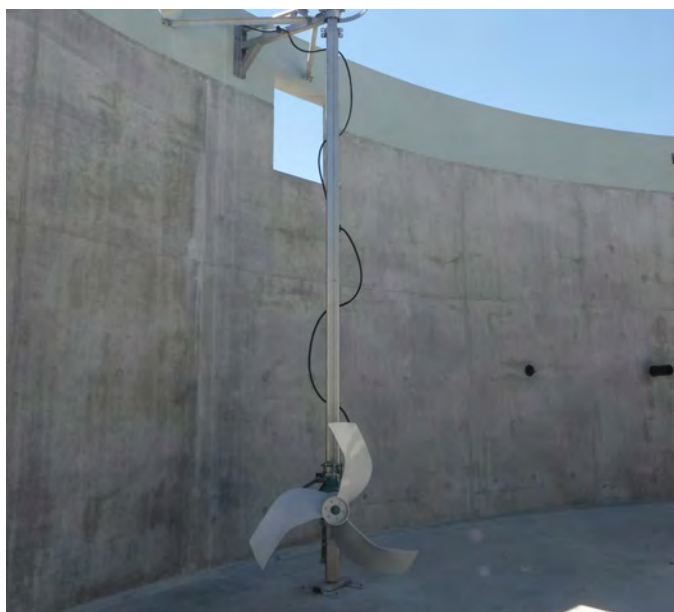


OPTIMIX 2G 90-90

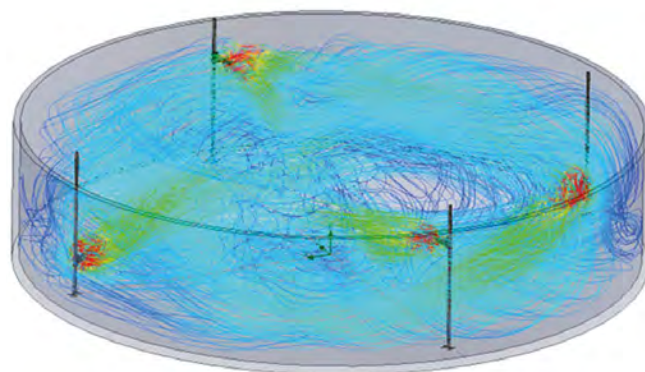


| Type | Power | Ø Propeller | Speed |
|------|--------|-------------|--------|
| 2G | 7.5 hp | 39.5 in | 90 rpm |
| 2G | 12 hp | 55.2 in | 90 rpm |

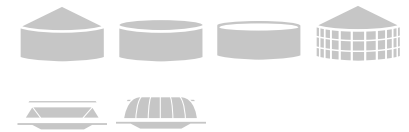
- Mainly used to maintain flow in combination with other agitators
- For dry matter content up to 12%
- 3-bladed LT 1400 propeller galvanized, stainless steel or hardened steel



Application example



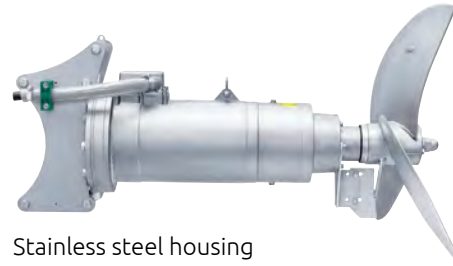
Stirring volume- 121,305 ft³



OPTIMIX 3G | 3A



Cast iron housing



Stainless steel housing

| Type | Power | Ø Propeller | Speed |
|---------|-------|-------------|---------|
| 3G 3A | 30 hp | 31.5 in | 325 rpm |

OPTIMIX 3G

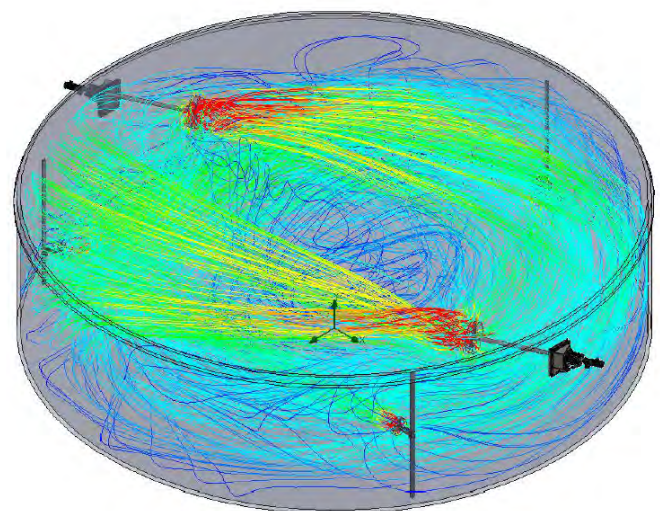
- High performance agitator for large tank dimensions
- For dry matter content up to 12%

OPTIMIX 3A

- High performance agitator for aggressive media with low pH values
- For dry matter content up to 12%
- Completely made in stainless steel



Application example



Stirring volume - 248,827 ft³



Gastight ceiling lead through GDD



- Especially for closed tanks, lagoons with bridges and other special tanks up to 39 ft depth
- Lateral adjustment up to 360°
- SUMA height indication to determine the exact agitator height in the tank
- For all OPTIMIX series applicable
- Optional available access cover reduces the loss of gas while maintenance
- Optional other heights on request



Application Example



Mast gastight wall lead through MGD



- Guide mast with base frame for tanks with a depth up to 46 ft
- External horizontally rotation 240°
- Adjustable in height through cable winch
- Optional SUMA height indication to determine the exact agitator height in the tank
- Optional angle display to determine the exact angle position of the agitator
- Optional other hights on request



Application Example





Suspension mounting frame EV



| Type | Doweling | Tank height | Cable guidance | Tank types |
|------|----------------------|-------------|--------------------|------------|
| EV3 | Wall support inside | 13 - 33 ft | on the rope / mast | |
| EV4 | Wall support outside | 13 - 33 ft | on the rope | |
| EV5 | Wall support inside | 13 - 33 ft | on the rope / mast | |

- For a 13 - 33 ft container height
- Lateral rotation $\pm 60^\circ$
- SUMA cable guidance and strain relief behind the guide mast
- Easy maintenance of the agitator without draining off the substrate or decending into the tank
- The whole OPTIMIX series are suitable
- Optional height indication to determine the exact height of the agitator within the tank



EV3



EV4



EV5

Suspension mounting frame EV3 light

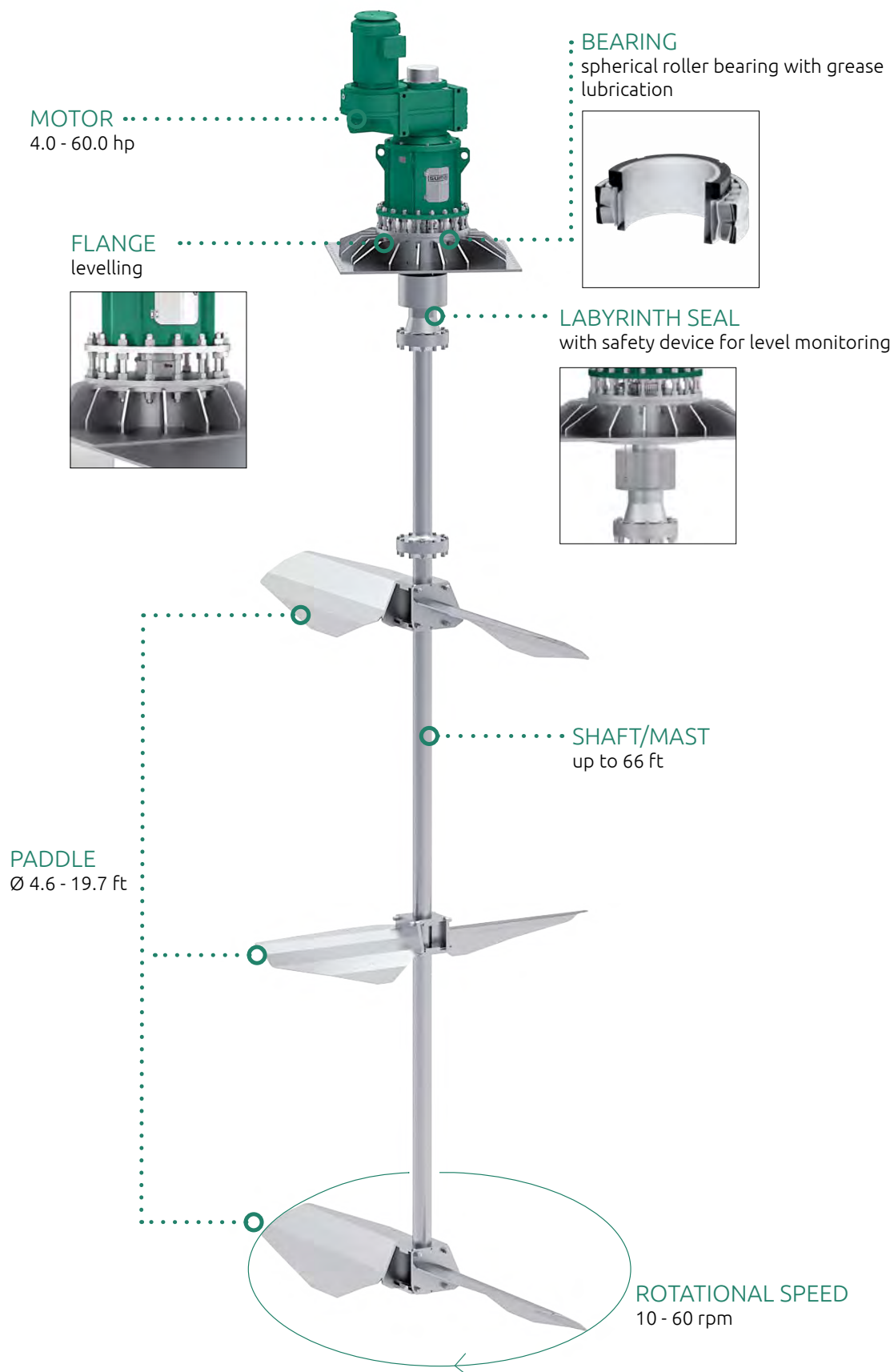


- For open concrete tanks (not gastight).
- For tanks with up to 23 ft height
- Lateral rotation $\pm 60^\circ$
- Suitable for OPTIMIX 2A 15-880
- Base frame and wall support in ss304



Application Example

Central mixer

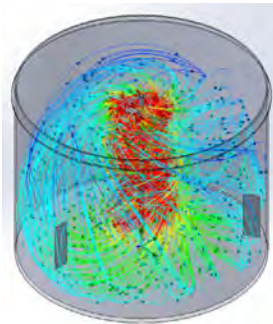
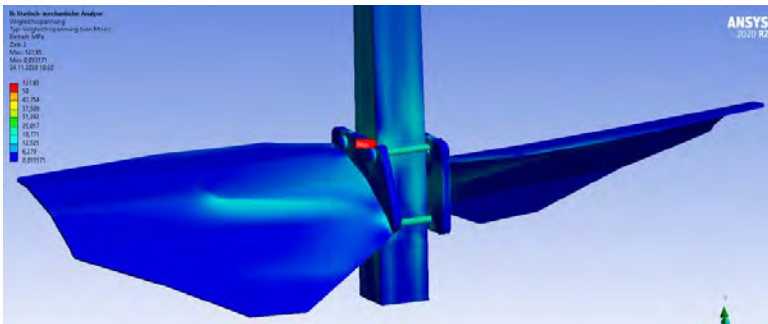


Central mixer

For solutions perfectly tailored to your requirements, we draw on our extensive product portfolio of agitators. This includes the central mixer Z-MIX, which ensures axial mixing of your ferment for fermentation of sewage sludge, waste, and agricultural and industrial residues. In particular, the Z-MIX is suitable for use in tanks with a volume of 3,530 ft³ - 350,000 ft³, where diameter and height correspond to a similar length. The agitator is characterized by low energy consumption.

ENGINEERING

Based on tank geometry, substrate properties and many other factors, our engineers use software-supported flow simulations and load capacity calculations to design a central mixer that will perfectly meet with your requirements.



PRODUCTION

Since the company foundation in 1957 the value creation has almost exclusively taken place at our headquarters. Our ideal manufacturing depth impacts the quality during the entire process chain, enabling us to carry out adjustments with ease any time and to execute customization cost-effectively.



SERVICE & ASSEMBLY

By purchasing a SUMA mixer, you have chosen maximum quality. Be it for a new installation, modification, component exchange or maintenance work - our team of experienced service specialist will support you. Depending on the customer's requirements, the Z-MIX can be installed from outside or in sections from inside. In addition access to the drive shaft offers easy maintenance.



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