# Optimisation of your agitator technology for more efficiency and system stability

Agitator technology that is not optimally configured and outdated represents a significant potential for improving your plant. With our unique breadth of product range (submersible agitators, rod agitators, vertical agitators and special designs) and more than 25 years of agitator experience, streisal is able to satisfy the particular requirement optimally.

## Case study: streisal Hydrobull® as a replacement for forced mixer & submersible agitator

### System profile

| | |
|---|---|
| **Operator** | Bioenergie Abele GbR<br>Dinkelsbühler Straße<br>73497 Tannhausen |
| **Commissioning** | 2010 |
| **Input materials** | Pig manure, corn silage, grass silage |
| **Technical data** | Hydrolysis: 1 x Ø 8 x 4,5 m, usable volume 200 m³<br>Digester: -<br>Secondary digester: -<br>Final storage: - |
| **Special features** | Hydrolysis gas-tight, feeding via solid dosing unit |

### Starting situation

**Agitator initial equipment**

- 1x15 kW forced mixer ZM 4 (Propeller diameter 850 mm, 264 rpm, 28,2 A)
  1x15 kW Bio Tec X160 submersible motor agitator
  (Propeller diameter 850 mm, 264 U/min, 28,2 A)

**Previous conversions**

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**Known problems**

- To mix in the solids and homogenise the contents of the tank, the fast-running agitators require large quantities of recirculating material from the secondary digester (liquefaction)
- Recirculation increases the pH value in the hydrolysis, interferes with the process and reduces degradation rates.
- The height of the forced mixer must be adjusted several times a day due to changing filling levels
- Long operating times of the agitators and recirculation pump mean high electricity and operating costs (high wear and tear)
- Maintenance of the agitators requires opening of the gastight tank

BIOGAS Effizienz Info


## Optimisation concept

**Replacement of existing agitators** — In Juli 2011, 2 x 18,5 kW streisal Hydrobull® Rührwerke agitators were installed. The forced mixer and the submersible agitator are removed.

**Exchange of agitator** – 

**Installation of additional agitators** – 

Our high-performance Maischebull®/ Hydrobull® agitating systems are designed for the most difficult agitating and mixing tasks in pre-pits and hydrolysis tanks. With an extensive range of different agitators, drive powers and installation options, streisal can supply individual solutions for a wide variety of tank geometries. The efficiency of the agitators is maximized by the large propeller and low frequency-controlled speeds. This means much lower and operating costs.

## Results

**Higher process stability**
- Problem-free mixing of the solids at different filling levels and highest dry matter contents
- The significantly lower recirculation volume results in longer holding times, stable pH values and better substrate digestion

**Improved agitating functionality**
- Complete homogenisation by increasing the circulation capacity by more than 200%

**Lower operating costs** (electricity saving)
- Massive reduction in electricity consumption
- Operator confirms annual savings of over € 6500 (calculated at € 0.17 per kWh)

**Less wear**
- Not quantified, but no wear and tear on the large blade propellers (very low peripheral speed)
- Non-contact shaft seal

**Advantages for maintenance and servicing**
- Important wearing parts are mounted externally and are therefore easy to access for maintenance and servicing
- No need to open the tank roof
- Smooth plant operation, i.e. no malfunctions or downtimes

Efficient, reliable and powerful agitators since 1988 streisal 25 years

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